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PREMIX

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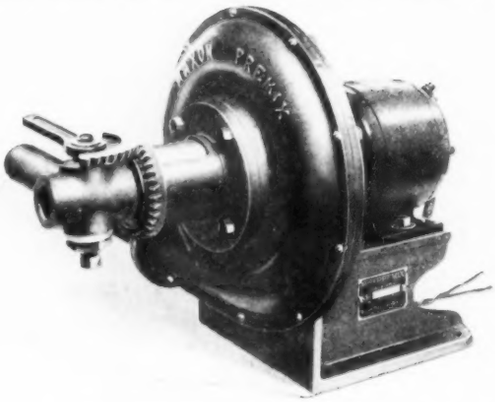

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AMERICAN
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The Modern Utilities Organization—Part I

Banishing Petty Jealousies Among Department Heads—Relation of Latter to Company—Keeping the Employee Friendly and Happy

By RALPH ELSMAN

General Manager Kings County Lighting Company, Brooklyn, N. Y.

Sometime during the course of his business experience, every general manager finds that his organization, of which he has been unduly proud, has broken into parts, and it is not functioning in its usual smooth manner. Department heads seem to lose grasp of the details of their work; clerks and minor employees seem to be at loggerheads, and in general the organization appears to have gone "stale."

The first question that comes is: "Shall I build a new organization of the old parts, or shall I get a new start with fresh material?" Thus building the organization becomes of unparalleled importance.

Process Constantly Going On

Even in the best of concerns, no matter how efficiently managed, this building process constantly is going on. In the course of the daily business, new and radical developments necessitate changes, and in addition the increased business requires additional employees, and now and again additional department heads. Thus, all of us are seeking always to find the right kind of man for a department head.

Finding the right kind of man is a task of no mean importance. In the first place, there is always the possibility of having within your own organization a man who has capabilities that would readily place him on a par with other men who are successfully managing the various departments. There is, it is true, the possibility of bringing a new man into the organization. This means the closest possible attention from the general manager as to his capability, without, however hampering the new man in his strange surroundings.

To diverge from this subject for a moment, the matter of applications for employment is one to which I have given a great deal of thought. We hear a great deal daily of efficiency experts and psychologists who prepare tests, including walking a chalk line, reading a page from a book, doing mental arithmetic, and the applicant's preference as to the part in his hair. I believe thoroughly in efficiency, like the sound of the word, and enjoy seeing it worked out, but I believe all efficiency is based on the honor system. It is this system that I use in employing men.

Relation to the Company

To get back to the organization of the department heads. The first point that naturally arises is what is the relation of these men to the executives of the company, and particularly to the general manager, who in most cases represents in his daily contact with the employees, the executive branch of the utility company.

Without laying down any set rule for guidance of any executive, confidence is naturally the basis for all transactions. If the general manager desires to make a change in the methods used in a department, the only one to take up the change with is the head of that department. Let him understand that you have confidence enough in him to believe that he will carry out your instructions in full, and that you believe enough in him to know that he grasps thoroughly the object to be attained.

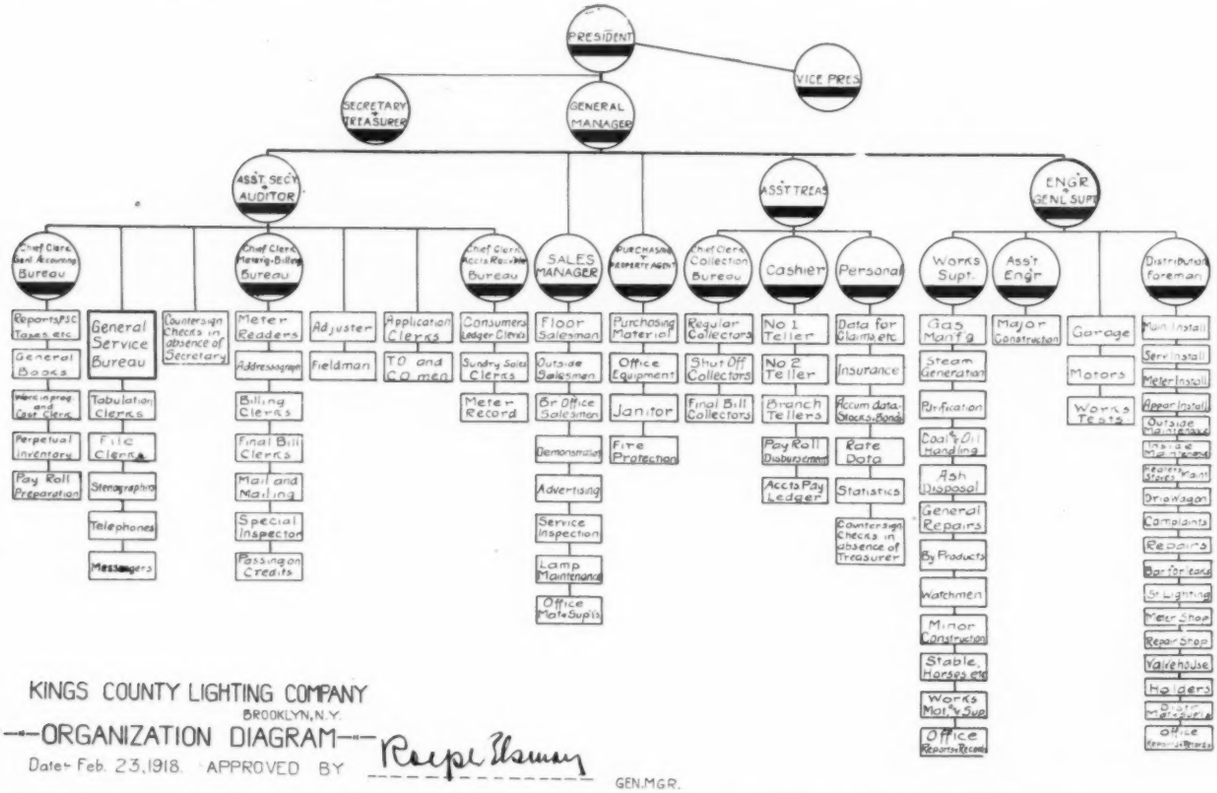
Eliminating Jealousies

The relationship of department heads with each other is a stumbling block in many organizations. Petty jealousies, the desire to get full credit for their own efforts, and the fear that unnecessary work would be placed on their departments frequently is a cause for dissension, and yet how simple is the solution of this problem. We find that weekly discussions and department head meetings is the best method of securing the maximum return. The point of contact between department heads is clearly brought out at these meetings. The duties of every department come before all of us for general discussion, and if any department has done particularly good work, attention is called to it, a mental pat on the back is given and an encouraging word spoken. There is no room in these meetings for disgruntled feelings or for the airing of petty grievances, but a man-to-man discussion which sometimes includes frank constructive criticism is the order of the day.

At all these meetings comes co-ordination of effort, both in departments and in their relations to other departments. Co-operation is secured and everyone is made to realize that he is a part of the organization,

and on his efforts depend the smooth working of the entire machine.

Records that naturally are company property sometimes are considered by heads of departments and their subordinates to be personal records, and as such are carefully guarded from other departments. Sometimes, as I have learned through experience, it is well simply to transfer the jurisdiction of those records from one department to another for the time being, if not permanently. This is radical, but it at once establishes the record as a company one, and brings out the interest and like the familiar quotation in the advertisement, "Once used, always used," I don't like to hold up my organization as a model. We have not yet reached that stage of 100 per cent perfection which is going to be necessary for the business millennium, but we have ideals, and incidentally they are good ones, which we are seeking to reach daily. Sometimes we reach that 90 per cent mark, and sometimes we are at the—well, call it the fifty-fifty point. Just the same, it is increasing our efficiency. (Try as I will, I can't get away from that much used, much abused word.)



KINGS COUNTY LIGHTING COMPANY
BROOKLYN, N.Y.
—ORGANIZATION DIAGRAM—
Date Feb. 23, 1918. APPROVED BY Roepe Ilsemann
GEN. MGR.

of and makes clear the paramount importance of the company.

Picturing the Modern Utilities Organization

Every utilities company executive knows the value of the graphic chart when it comes to the daily, weekly and monthly loads with their peaks, but how many actually apply the use of this chart to the business organization? I have found it to be of great value. The accompanying illustration shows the diagram that we evolved. This chart shows clearly and definitely the duties of the different departments, and just what the scope of that department is and where its division from other departments comes. No misunderstanding can arise as to the responsibility where a chart is in use, and department heads are careful to see that those things which naturally come under their jurisdiction are properly attended to.

In our charts we use the names of the department heads. This use has a psychological effect. (I had determined in writing this that I would not use psychological, but it will creep in.) This chart has a mighty definite value when it comes to modern organization,

Keeping the Employee Happy

Perhaps everyone knows the description given by the warden of a prison regarding his inmates when he said: "We are just like one big happy family here." That we are happy, is an important factor in the success of utilities. If the employees are not happy in their surrounding, their value manifestly is decreased. This is where the employees' association fits in. Our employees' association has a 100 per cent membership. It is officered by men who are in no way connected with the management of the company. It is an independent organization, which, perhaps, may best be described as being subsidized by our company, but at the same time dues are collected from the members and their membership is held by them to be of real importance.

The relation of various sub-committees to the management of the business is a distinctive feature. If they have suggestions, they are thoughtfully received, and in many cases favorably acted upon. In this connection, it must be made clear that the association is not a union, but is a social organization throughout.

In our main building we have provided club rooms, well furnished, and with a completely equipped dining

room, where employees daily secure their midday meal. The club rooms are supplied with periodicals having to do with our business, and also with current magazines and newspapers.

It is true that there is no direct monetary return for the money expended to equip these club rooms, but every dollar is given back in its equivalent—good fellowship and co-operation.

The Organization and the Public

We are not ashamed of our organization. In fact, we are rather proud of it. Whenever opportunity offers, we tell our particular public just who we are. We have a department organized just for this purpose. It is another one of the so-called radical ideas which we have put into effect, but it has produced marked returns in cutting off unnecessary and unjust complaints, and it has produced a direct return in bettering the inter-departmental relationship. Just a word here about our company magazine. It goes to every employee, and, by the way, is carefully read by everyone of them, and gives them a chance for the interchanging of ideas.

In dealing with the public, we believe that for the return the consumers give us, they are entitled to every bit of courtesy that we can give them. We tell the public about our ideals in this connection, and then ask them to help us live up to them.

This unfailing courtesy has a peculiar equivalent. It is in the fact that while we insist that our employees be courteous at all times, we are equally insistent that the public extend to us the same treatment.

There used to be a type of executive who, when a patron became unreasonable, and perhaps aroused the "spunk" of an employee, would at once either enter into the argument, making it worse, or he would discharge the over-zealous employee at once.

There is an old saying that it takes two to make a quarrel, and this applies as well to the business world as it does to any other condition of modern-day life. So don't always jump to the conclusion that your employee is wrong. Suspend judgment for the time being. Make your investigation and then decide. Sometimes I have decided against my employee. Frequently, however, I find that the employee had right on his side, even though the judgment used was not of the best.

In this article I have not taken up the executive details of organization, but have taken up company formation in a general way. I have tried to make clear some of the ideals which we have and some of our animating reasons. The main reason behind our entire activity is that we know it is good business, and good business is a never-failing dividend payer. Later on I will deal with the organization of the individual departments, their duties, their personnel and their responsibilities.

Utility Situation Not Merely the Concern of Investors

"In the meantime the public utility question is indeed an urgent one, and its prompt solution presses upon those responsible for war efficiency. It is not a local question; it is not a question of saving the investments of scattered individuals; it is not merely a question of safeguarding insurance companies and banks, whose funds are invested in public utility securities; it is not merely a question of safeguarding the general financial situation or providing stability of earnings and integrity of investments out of which war taxes and war loans can be raised. The public utility question is clearly a question of national war efficiency, which requires immediate emergency remedies in both higher rates and capital advances—efficiency which will help us win the war, which will save the lives of our soldiers and our allies' soldiers by supplying them more promptly with the tools of war; national efficiency which, impaired, means loss of untold lives and indefinite postponement of that day to which the whole anti-German world looks forward—the day of victory."—*O. B. Wilcox.*

Selling at Home Policy Brings a Thousand Subscribers to Rochester Company's Preferred Stock

Bulk of Sales Have Been for From One to Twenty Shares—First Offer of $500,000 of Seven Per Cent Preferred Stock Taken Up

The opening of a campaign for the sale of 7 per cent preferred stock of the Rochester Railway & Light Company marks an epoch in the history of the financing of this utility company, writes Charles A. Tucker. Never before has the opportunity been broadly given to those who contribute toward the company's success to also share in its profits, and the results thus far obtained demonstrates the fact that hundreds of persons in Rochester were ready and eager to invest their capital and become partners in the gas and electric business.

Wide Distribution a Gratifying Feature

The company is well and favorably known in the community, and this fact inspired confidence and a desire to be associated financially with such a successful enterprise. It has brought to the company nearly 1,000 subscribers to its preferred stock up to the time this article was prepared. The gratifying feature of the sale of stock thus far is its wide distribution over all parts of the city and surrounding territory, and among people in all walks of life, from the one-share subscriber to the 100-share subscriber. The bulk of the sales have been in lots of from one to twenty shares, with five to ten share lots predominating. This is as it should be. It brings to the company the combined interest of hundreds of stockholders to supplement the successful efforts of the management in building up the business to serve the community satisfactorily and in returning to the stockholder partners a reasonable interest on the investment.

Sales Have Run in Families

The first offer of $500,000 of 7 per cent preferred stock to the customers and employees of the company was taken up by 510 customers for 4,587 shares and by 160 employees for 441 shares. While the subscriber for stock had the option of paying for it in full with accrued dividends at time of subscription or paying for it on the monthly plan, the greater part was paid for in full. Nevertheless a goodly portion was taken on the monthly plan, an excellent way, as it induces one to save, and thus makes less demand upon the banks to supply immediate funds.

There have been many interesting features about this sale noted by the writer, considerable family history has been revealed, and many tales told of how the money was saved to make the investment. Many have bought two different lots and quite a number have bought three times, in increasing amounts each time. Sales have also run in families, as many as four in one house in two instances being purchasers.

The meeting with nearly all these new stockholders by the writer has been a most pleasant and instructive experience, and gives him a larger and broader view in a field not heretofore cultivated. The "people," our customers, and employees, earn and save their money, and want to invest it safely and to receive a good return. When they put it in the company's preferred 7 per cent stock they have made choice of a security that has unusual merit. The sale of the second $500,000 offer is on the same terms as the first.

A Lesson to the Company's Employees

The employees of the company have entered into the spirit of the sale and have been enthusiastic salesmen, securing subscriptions for thousands of shares. This work has been an education for them and has given them a practical illustration of what is required to secure funds for the necessary financing for enlargement of the company's enterprises. They realize now that money for financing a company does not come out of the air, but that many must save and then be invited to participate, after being shown that an investment in a public utility of our standing is desirable and safe for them.

The Rate of Coke Production

An outstanding fact in the weekly reports of coke production prepared by the United States Geological Survey is that there has been no material change in the rate of production since the middle of March. In the fifteen weeks following that time the coke production of the country average 1,130,000 net tons a week. There have been fluctuations from week to week, but no general trend toward either greater or less production. Experience thus far seems to indicate that further increases can be expected only through increases in by-product coking capacity. The by-product ovens can hardly operate at better rates, in proportion to capacity, than in the past two months, when they have reached 90 per cent of capacity. The beehive ovens do not increase, and indeed tend to produce somewhat less coke, as certain of the new by-product ovens coming in from time to time drain coal away from them.

The country's total by-product coke capacity at the beginning of this year was 26,005,400 tons. The preliminary statement of production in 1917 as given out by the Geological Survey early in January was 22,600,000 net tons, which with an allowance for the fact that some of the ovens had operated for only a portion of the year, and assuming a 90 per cent operation for plants in running order, checks quite closely with the figures just cited.

The latest Geological Survey reports indicate a by-product coking capacity of close to 550,000 tons a week. The increase since the first of the year is due to new capacity, and there is much more of this to come in the next two or three months. Among the additions, recent or in near prospect, are: 140 ovens at Gary, making 700 altogether; 180 of the leading wire company at Cleveland; 208 at Lorain; 640 at Clairton and 102 of the Youngstown Sheet & Tube Company at Youngstown; there are also several smaller operations. The total of new capacity from Jan. 1 to Sept 1 is in the neighborhood of 140,000 tons a week, which added to 500,000 tons at the beginning of the year gives 640,000 tons, and this at 90 per cent operation would mean 575,000 tons a week or an even 30,000,000 tons a year.

When an attempt is made to compare coke supply with pig-iron production the interesting circumstance is uncovered that the production of pig iron in 1917 was 800,000 tons less than in 1916, while the production of coke was 2,000,000 tons more. It is also found that the production of pig iron in the first two months of this year was low in comparison with the reported production of coke. The explanation is that when coke supplies are insufficient for the requirements of the blast furnaces that are attempting to run, the coke consumption per ton of pig iron is abnormally high, coke performing poorly just when it is most needed. This is due in part to poor quality of coke and in part to irregular operation of blast furnaces.

For the future, of course, nothing but an efficient operation can be considered. Ovens must be so supplied with ears that they can produce good coke, and only the number of blast furnaces must be operated that can be fed full supplies of coke. Comparisons, therefore, should be made with the performance in 1916, when there was produced 54,533,585 net tons of coke and 39,434,797 gross tons of pig iron. Outside the blast furnace there should be less coke used now than in 1916 rather than more. Since the middle of March, as already noted, coke production has averaged 1,130,000 tons a week, which is 8 per cent more than the average in 1916. We should be producing at least 8 per cent more pig iron than in 1916, which would mean a rate of 42,500,000 tons a year. If that is not done, the reason must be found. The rate in June was under 40,900,000 tons, and the discrepancy should be investigated.

If the rate of beehive coke production were maintained as additional by-product ovens come into operation there would be a large excess of coke, but that, of course, cannot be expected. In the past few weeks the production of beehive coke has averaged 625,000 tons a week, while by-product production by about Sept. 1, at an operation 90 per cent of capacity, would mean, as already noted, about 575,000 tons a week. The two together would make 1,200,000 tons a week, or 62,500,000 tons a year, this being equal, according to the proportion obtaining in 1916, to a production of more than 45,000,000 tons of pig iron a year, and the blast furnace capacity is materially less than that.

The distinct probability is that when by-product output reaches 575,000 tons a week, next fall the production of beehive coke will have declined, from the present 625,000-ton rate, and it may decline to 575,000 tons. In that event the two classes of production would be on a par. In 1915 the proportion was almost two to one for beehive. In 1910, only eight years ago, it was nearly five to one. The change represents a very great stride. There is the military necessity of the explosives produced from the by-products; there is a financial economy in the manufacture of the coke and pig iron, and there is an important saving in common labor, of which much less is required in by-product than in beehive practice.—*Iron Age.*

Expects Use of City Gas as Motor Fuel to Be Permanent and to Increase Vastly in Volume

John Richmond, Addressing Scottish Gas Association, Holds It Strange That It Required War to Bring Advantages of Gas for Industrial Purposes to the Front

There is scarcely a metallurgical industry but has had coal gas adapted to its use, with economical results to the manufacturer. The smelting of gold, silver and precious metals in the Royal Mint by coal gas saves many thousands of pounds per annum. Its use in general brass foundry work is common, and its utility and efficiency in case-hardening, annealing and other work have made gas industrially indispensable. But it is to the newer and more recent application of gas to motive power that many of us look to the extended use of our commodity, declared John Richmond, addressing the annual convention of the Waverly Association of Gas Managers at Edinburgh. It is strange that it required a great war to bring the possibilities of coal gas in this direction to the front; but out of evil good often comes, and many industries besides that of gas manufacture will in time to come permanently benefit by the necessities imposed by war-time conditions which are just now presumed to be only temporary.

How has gas-motor traction come about? First, by the primary law of supply and demand, supplemented by that all-powerful factor of pounds, shillings and pence. The demand for motor fuel in the liquid state being greater than the supply, caused the price to increase until someone looked to gas as a substitute. Its possibilities at first did not seem so great as at present, but when actual costs and efficiency proved its capability, and on an average the cost was about a quarter of that of petrol, an impetus was given to gas-motor traction which we little thought of. Is this development a war-time expedient or has it come to stay? This is the question we have to put to ourselves, and make arrangements accordingly. I consider it has come to stay, and will be ever on the increase.

There is little prospect of motor spirit ever being reduced in price to compete with gas on the score of economy, as the total world's production of oil from known sources is decreasing, while the world's demands is ever on the increase. There remains the development of yet undiscovered oil fields, and the augmentation of manufactured mineral oil to make good the balance between supply and demand. But whichever way we look, there is no prospect of liquid fuel ever again competing with coal gas as a motor fuel on the score of economy. The only advantage which petrol has over coal gas is that it contains a large amount of energy in a small space. But gas, besides being more economical, does not necessitate prepurchase and dangerous storage to the user, and is conducive to clean cylinders and the absence of injector troubles, and no starting difficulties in cold weather.

Motor Traction Supply

I have been favored with a few statistics of practical running costs by the general manager of the Scottish Motor Traction Company, a company which is among the largest users of gas for motor traction in the British Isles. His figures as to efficiency of gas bear out what we have been already told—that 250 cu. ft. of gas is equivalent in practical working to 1 gal. of petrol. But the flexible containers on their heavy buses cost approximately $250 each, and those on the long hilly journeys, run in all weather, are subject to considerable wear and tear. The upkeep of the containers has cost 1¼d. per car-mile, and with the cost of gas, which comes out at 2¼d. per mile, and attendant's wages at the filling station, the total cost is 3½d. per mile. This price is about double the cost of running on petrol in pre-war times, but is a considerable saving compared with petrol at present prices.

The company is experimenting with a semi-rigid cover over their container, in the hope that the excessive wear and tear might be reduced. The experience with gas in the engine is that gas has a much more drying effect than petrol. Valves become dry and stick when running on coal gas, and to endeavor to get over this they draw in air for the coal gas through the crank chamber, so that the air absorbs a small proportion of oil in a vaporous state, and quite good results are now being obtained by this arrangement. Another trouble which the company has had is with the carburettor, needles, weights and floats. When running on coal gas the petrol is turned off, so that the float chamber of the carburettor becomes quite empty. The vibration then acts very severely on the float, needle and weights, and every day or so these have to be seen to. Otherwise the petrol leaks past the needle valve all the time the petrol is turned on. This is due to the needle valve having spoiled its seating and the float in many cases becoming punctured. The Scottish Motor Traction Company is experimenting to overcome this trouble, and no doubt will evolve something satisfactory. The company have not yet experimented with compressed coal gas, owing to the difficulty of obtaining cylinders and compressing plant, but they are thoroughly satisfied with the economy of coal gas traction in present circumstances.

To turn this proved economy into a permanent benefit to the industry, we must be prepared to give an efficient gas supply at a reasonable cost to motor users. The flexible container has come in for a considerable amount of abuse because of its unsightliness; but this container has a long future before it. It is only in large industrial centers that elaborate and costly compressing plants can be introduced to meet a demand for gas traction supply in compressed metallic cylinders. Hence the general utility of the flexible container, notwithstanding its unsightliness, will retain its hold on users for a long time to come.

Reduced Quality: Advantages and Disadvantages

In these days, when the candle-power standard has become obsolete, and the stripping of gas of its illumi-

nating hydrocarbons has become nearly a necessity and is permitted by law, the relative value of gas to consumers is represented by its thermal efficiency. At the present time great divergence of opinion still exists as to what the standard of thermal efficiency should be fixed at. The argument used—that gas of (say) 450 B.t.u. is as efficient in practical use as gas of 650 B.t.u.—is undoubtedly correct. But this does not say that gases so widely differing in thermal value are of equal value to the consumer, although they may be equally serviceable. One cubic foot of gas of 450 B.t.u. requires about 5 cu. ft. of air to complete combustion—giving (say) 6 volumes of self-combustible gas; whereas 1 cu. ft. of gas of 650 B.t.u. requires fully 7 cu. ft. of air, giving 8 volumes of self-combustible gas. Thus if 450 B.t.u. gas is sold at 37 cents per 1,000 cu. ft., 650 B.t.u. is worth 50 cents, or 25 per cent better. Power users in motors ought to be acquainted with this, as gas supplied by a country village where oil-washing is not in use, and a large proportion of cannel coal is used, may be worth more to them, even at the higher price, than the gas supplied by our large city works.

The reduction in the candle-power standard and the substitution of thermal value has given a great incentive to large productions of gas per ton of coal carbonized, and many works now claim makes of 15,000 cu. ft. per ton and upwards. In many cases the increase in make is due to resorting to steaming in vertical and even in horizontal retorts, whereby a considerable quantity of blue water gas is generated. This has the advantage of giving gas comparatively free from inert gases, and seems to be more fair to the general public than the supply of large volumes of gas generated in water gas plants. There is only one step between honest and dishonest trading, and at the present time, with the craze to get as much gas per ton of coal as possible, we are apt to forget that we may be supplying the public with a quantity of inert gases from which they obtain no value, and which they have to pay for. If such a practice becomes general, sooner or later we shall have legislation to enforce that all the inert gases be eliminated—just as formerly candle-power was insisted upon and sulphur compounds kept down. I have always been taught the formula that just as there are 20 cwt. in a ton of coal, so it is good practical working to obtain a combined figure of 20 in gas and and coke salable in the carbonization—say 10,000 or 12,000 cu. ft. of gas and 10 or 8 cwt. of coke—salable residue. In practical working few works in Scotland come up to this standard, therefore I think they could safely retain this figure as an incentive to obtain results and practical working for some time to come.

We must also take into consideration the fact that inert gases in our commodity have a very deleterious effect upon our plant. Many years ago I had occasion to repair a gas holder in a works where partial oxide revivification *in situ* was in use and had been for a few years previously. I was so struck with the amount of internal corrosion which had taken place on this holder that I called my employers' attention to the fact, and, after having the tank water sampled and tested, I came to the conclusion that the oxidation was attributable to the "*in situ* air purification process." Further investigation has shown me that in this and other towns where air purification is in use, mains, services and even meters are internally corroded—a thing unheard of in the old days of genuine gas manufacture from cannel coal. And if ordinary air purification has been responsible for so much depreciation, what will be the effect with the addition of carbonic acid, cyanides and other corrosive compounds? It might be advisable to ponder over the subject and think: (1) What benefit is the consumer deriving from this stretching and adulteration of gas through our craze for big makes per ton? (2) Is the game worth the candle to our employers, if depreciation of plant is taken into account?

How the Gas Companies Are Helping the Nation

Former Employee of Consolidated Gas Company Died From Wounds in France

RICHARD JOSEPH MULLEN, twenty-eight years old, of 327 East Sixty-ninth Street, New York City, was drafted into the National Army in October, 1917. His name was among the dead from wounds on a recent casualty list sent by General Pershing. He was a private in the 9th Infantry, which has been active on the Marne. He died on June 21. Previous to entering the service Private Mullen was an employee of the Consolidated Gas Company of New York.

THE BANGOR GAS LIGHT COMPANY employees subscribed without exception their 100 per cent quota to the War Savings Stamps campaign which is being carried on in Bangor, Me., this record being due to Manager G. W. Dolley's efforts.

BERNARD KENNEDY, one of the employees of the Webster & Southbridge Gas & Electric Company, Webster, Mass., who left in the draft quota July 9, was presented with a wrist watch, fountain pen, a quantity of cigarettes previous to his departure by the employees of the company. More than $220 was collected among the workers for the gifts.

PRIVATE T. H. DUNN, who was recently reported as seriously wounded, was employed by the New Amsterdam Gas Company, New York, before enlisting. He is a member of Company C, 9th Infantry, and enlisted June 5, 1917, sailing for France last September. He was born in Manhattan and lived in Long Island City for several years.

THE LACLEDE GAS LIGHT COMPANY, St. Louis, Mo., has loaned its advertising manager, D. C. Seewin, to the United States Food Administration. Mr. Seewin has been commissioned "space negotiator," in which capacity it will be his duty to negotiate with hotels in that district for space on the exterior of their buildings for food administration signs as part of a new campaign which has just been launched by Mr. Hoover's department. While Mr. Seewin is working for Uncle Sam his salary is being paid by the gas company.

Club Tries Coal First, Electricity Next Then Turns to Gas For Cooking

Power Rate on Second Law, But Upkeep Prohibitive—Cost Something to Get Gas in and Little Effort Was Made by Gas Interests to Sell Installation, But Consumer Satisfied with Results

By LOUIS RESNICK

This is the story of a gas-fired hotel kitchen installation that not only sold itself, but came to the rescue of one of St. Louis County's most fashionable country clubs after coal and electric ranges had failed it. Incidentally, it is the story of the failure of one of the few sizeable electric-range installations thus far made in the county. It is the story of an electric range that was killed by its upkeep and was "junked" as soon as the period of free maintenance expired in order to make way for a cheaper and better gas appliance. The experiences of the principals in this transaction should provide a valuable "selling point" for the hotel-appliance gas man who is in competition with coal and electric hotel appliance interests.

All in the Course of Eight Years

About eight years ago the Bellerive Country Club erected a beautiful building at Normandy, Mo., in St. Louis County. The kitchen was equipped with a number of coal ranges by the Majestic Manufacturing Company, of St. Louis, which at that time had not yet turned to the manufacture of gas-fired hotel ranges.

A little over two years ago the coal ranges at the Bellerive Country Club were replaced by a series of high-priced electric ranges and ovens that were pronounced the "last word" in hotel kitchen equipment. The deal for the electrical appliances was clinched by the statement of the manufacturer that to show his confidence in the appliances he would guarantee to make all repairs, "if any were necessary," without charge for a period of two years. This was put in writing and the installation was made.

Proud of Its Distinction

For several months the Bellerive club was proud of the distinction of being the only club in the vicinity of St. Louis with an electric kitchen. Then one evening, when a large number of the club's members and their guests were waiting for dinner to be served, something went wrong with the electric range. Picture the plight of the club's manager and of the house committee that selected the electrically operated kitchen. The telephone wires were "burned up" (in the parlance of switchboard people) in a mad search for an electrician who had had experience in repairing electric ranges. Long before the repair man arrived many of the members and their guests had departed to have dinner elsewhere.

For two years such exasperating

AFTER EIGHT YEARS OF EXPERIMENTING THIS CLUB TURNED TO GAS FOR COOKING

THE GAS INSTALLATION THAT, FOR THE FIRST TIME IN EIGHT YEARS, LEFT THE CLUB OFFICIALS FREE FROM ANXIETY IN REGARD TO THE KITCHEN

occurrences were more or less frequent. True, the manufacturer of the electrical ranges fulfilled his contract, and made all the necessary repairs without charge. This together with the fact that the Bellerive club enjoyed a very low rate for electrical power because of its proximity to the transmission lines from the Keokuk (Ia.) dam, helped the members of the club to overlook the inconveniences caused by the frequent disorders of the electrical equipment.

JUNKED AT END OF FREE MAINTENANCE PERIOD

When the two-year free maintenance contract expired, however, and in addition to frequent interruptions to dining room service, there were frequent and big repair bills to be paid to electricians, the house committee went into the market for another range. Believing that gas was unavailable in that part of the county, the committee went to the Majestic Manufacturing Company with the intention of getting another coal range such as the club used before the electric appliances were installed.

During the interim, however, the Majestic company had almost stopped the manufacture of coal-fired hotel ranges, and has made great progress in the manufacture of gas-fired appliances. Milton S. Branditz, manager of the hotel department of the Majestic company, therefore suggested a battery of gas-fired ranges. The members of the Bellerive house committee protested it would be too expensive a proposition to extend the gas mains from the nearest town to the club house. Mr. Branditz told them the gas mains of the St. Louis County Gas Company were beneath the road directly in front of the club house. The clubmen were no sooner convinced of this fact than they ordered the Majestic company to look over the club's kitchen and submit specifications for gas-fired equipment.

LETTING THE PROSPECT SELL HIMSELF

Mr. Branditz happened to be extremely busy just at that time, and so made no extended efforts to sell the prospect. Instead, he merely referred them to some of the many hotels and clubs in St. Louis using gas-fired ranges. The house committee made its own investigation, and approved the specifications submitted by the Majestic company. After listening to experiences of the St. Louis clubs using gas ranges, the committee was so anxious to displace the electric range that it paid without hesitation $300 for bringing gas service from the road to the club house.

Even with this expense the committee considered the gas installation a saving. For the chairman of the house committee is authority for the statement that the upkeep or repairs of the electric range after the expiration of the free maintenance contract amounted to about $25 a week.

WHERE THE ELECTRIC INSTALLATION RESTS

Accordingly a big three-section electric oven was stored under the back porch of the club house and a three-section Majestic High Duty gas range installed in the Bellerive kitchen. At the same time an electric broiler was replaced by a 36-in. Majestic gas broiler. The cost of the gas appliances was approximately $550. The first inquiry was made by the clubmen on Feb. 19, and on March 8 the gas installation was made.

Mr. Branditz looks back on this sale as a record-breaker, so far as time is concerned. In fact, he does not even claim to have made the sale.

"I merely allowed the prospect to make the purchase," he says. "I don't think that I spent more than three hours on the whole transaction, and of these two hours were taken up by a trip to and from the country club. The range itself and the advantages of gas over coal and electricity as a fuel for a high-class hotel or club kitchen closed the deal."

St. Paul Company Will Occupy New Quarters April 1, 1919

The St. Paul Gas Light Company leased the entire Commercial Building, Sixth and Cedar Streets, St. Paul, Minn.

The building is three stories and is 100 x 100 ft. The ground floor is occupied by stores and the upper floors by offices.

Arrangements have been made whereby all leases will be canceled and the gas company will move into its new quarters April 1, 1919. The lease is for fifteen years and the consideration for the entire term will be $350,000.

The gas company will use the basement for a display room, the ground floor for the public offices and the second and third floor for their own offices.

No arrangements have been made for the leasing of the building on the corner of Jackson and Sixth Streets, which the gas company will leave next April and on which it has another year's lease.

Bristow Consumers to Pay 35 Cents for Gas

A compromise was effected between the Bristow Gas Company and the city of Bristow, Okla., which called off the necessity of going before the corporation commission. The city and the company agreed to certain raises, domestic gas to cost 35 cents per 1,000 cu. ft. and a sliding scale for industrial purposes, the minimum charge to be 15 cents. Joe Abraham, the owner of the franchise, agrees to furnish all the gas the city needs, both for domestic purposes and for industrial purposes as well. Since last winter he has had drilled two big gas wells, one of 3,500,000 and the other of 2,000,000 capacity, each with an 800-rock pressure. This gas will all be used in Bristow, and a new line is now being laid to the city from these wells.

PATENTS PERTINENT TO GAS INDUSTRY

Draining Garbage Incinerator with Outer Receptacle for the Liquid

Patent No. 1,257,350; described in Patent Office *Gazette*, Feb. 26, 1918, page 767. Nels C. Johnson, Racine, Wis. Filed Nov. 20, 1916. Serial No. 132,321. (Cl. 110-18.)

This incinerator has an outer casing at the bottom of which there is a drain. An inner receptacle is placed inside the outer receptacle, and the garbage is placed in the inner receptacle by means of a chute. At the bottom of the inner receptacle is a set of upright burners, over which is placed a protecting drain. The object of the design is to separate the moisture from the garbage insofar as possible before lighting the burners.

Supplemental Bottoms for Draining Gas Meters With the Minimum of Time and Labor

Patent No. 1,257,414; described in Patent Office *Gazette*, Feb. 26, 1918, page 783. Austin J. Smith, Brooklyn, N. Y. Filed Dec. 18, 1916. Serial No. 137,704.

This device is designed for use with gas meters having a vertical partition dividing the interior of the meter into front and back compartments. Supplemental bottoms are arranged in these compartments so that they slope to one side of the meter. At this side a drain composed of a main pipe closed at one end and provided with a cap at the other connects to the drainage bottoms through valves and branch pipes.

A Combined Pipe Flanging and Bench Vise With Specially Designed Jaws

Patent No. 1,257,475; described in Patent Office *Gazette*, Feb. 26, 1918, page 801. John Gapp, Scranton, Pa. Filed Oct. 6, 1916. Serial No. 124,023. (Cl. 81-19.)

The jaws of this vise have semicircular openings, and are held in place by means of a pocket. The opening at the rear of the shoulder of the jaws is of smaller diameter and provided with teeth for clamping the pipe. The shoulder is designed to hold a pipe sleeve. It is equipped with retaining plates and adjusting screws for adapting it to different work.

A Gas Stove Water Heating Device for Use Over Gas Stove Burners

Patent No. 1,257,622; described in Patent Office *Gazette*, Feb. 26, 1918, page 846. Carlos A. McNeir, Minneapolis, Minn. Filed June 2, 1916. Serial No. 101,274. (Cl. 126-53.)

This is a water-heating device for use over the burners of a gas stove. It consists of hollow rings provided with a partition to direct the circulation of the water, inlet and outlet water pipes, and means for supporting the rings over the burners of the gas stove.

Device for Separating Volatile Products From Solid Carbonaceous Material by Means of Heat

Patent No. 1,257,772; described in Patent Office *Gazette*, Feb. 26, 1918, page 889. Walter William White, High Holburn, London, England. Filed Sept. 1, 1916. Serial No. 118,004. (Cl. 196-21.)

This is a process of separating condensable volatile products from solid carbonaceous material distilled in a retort. It consists in heating the material to a graduated temperature, withdrawing the distilled vapors arising at different temperatures from contact with the solid material, leading the separated vapors distilled at higher temperatures through the separated vapors distilled at lower temperatures to cause the condensation and removing the uncondensed vapors, the condensation taking place out of contact with the solid material.

Inverted Incandescent Gas Burner With Multiple Mantles Enclosed in a Globe

Patent No. 1,257,930; described in Patent Office *Gazette*, Feb. 26, 1918, page 935. Jacob Ignot Robin, Harrow, England. Filed Aug. 1, 1914. Serial No 854,446. (Cl. 67-94.)

The mantles in this burner are enclosed with a globe. The air inlet to the mixing chamber is below this globe and a tubular extension projects upward to a conical distributor to which the mantle supports are attached. A sleeve which rests on the inner surface of the globe and encloses the extension supports the distributor and mantles.

Safety Stop for Elevators with Electrical and Manual Controls

Patent No. 1,258,127; described in Patent Office *Gazette*, March 5, 1918, page 52. Nils O. Lindstrom, Nutley, N. J., assignor to Alonzo B. See, Brooklyn, N. Y. Filed Sept. 9, 1915. Serial No. 49,671. (Cl. 187-91.)

This safety stop has gripping jaws provided with automatic means for closing and manual means carried by the car for opening. It also has electrical means for resetting the automatic mechanism.

An Insulated Gas Range Equipped With Circulating Flues for Directing the Flow of the Heat

Patent No. 1,257,373; described in Patent Office *Gazette*, Feb. 26, 1918, page 771. Franklin P. McCarty, St. Louis, Mo. Filed May 19, 1917. Serial No. 169,807. (Cl. 126-39.)

This gas range is provided with a baking oven and a burner space whose outer walls are insulated to prevent the heat from radiating outward. It has flues so arranged that the products of combustion of the burners will flow upwardly at the sides of the oven, then downwardly

through the oven, and thereafter upwardly through the side walls of the oven and horizontally through the top wall of the oven. In addition to the up-and-down flow of the products of combustion, this oven is fitted with heat-absorbing material arranged in proximity to the flues in such a way as to absorb the heat of the escaping products of combustion.

A Heat Insulating Composition Composed of Infusorial Earth

Patent No. 1,257,922; described in Patent Office *Gazette*, Feb. 26, 1918, page 933. Hans M. Olson, Lompoc, Cal., assignor of one-fourth to Herman W. Becker, one-fourth to Maurice A. Balaam and one-fourth to Arthur A. Balaam, Santa Barbara, Cal. Filed Aug. 23, 1917. Serial No. 187,851. (Cl. 106-18.)

This is a refractory composition consisting of 88 per cent of pulverized infusorial earth, 1 per cent sodium sulphate, 1 per cent aluminum sulphate and 1 per cent lime.

Torch with Separate Passageways for Cutting Oxygen and Preheating Oxygen

Patent No. 1,258,769; described in Patent Office *Gazette*, March 12, 1918, page 277. John Harris, Cleveland, Ohio, assignor to Carbo-Hydrogen Company of America, Pittsburgh, Pa., a corporation of Delaware. Filed June 5, 1916. Serial No. 101,665. (Cl. 158-27.4.)

This torch has a passageway for cutting oxygen, a passageway for preheating oxygen, a passageway for the combustible gas and a mixing chamber with which the combustible gas passageway communicates.

A Bell and Spigot Joint Made of Wood and Lead

Patent No. 1,258,798; described in Patent Office *Gazette*, March 12, 1918, page 285. James R. McWane, Birmingham, Ala. Filed April 12, 1917. Serial No. 161,546. (Cl. 137-29.)

This joint is provided with a number of wooden rings or hoops abutting lengthwise of the joint with lead sealing between the rings and the mouth of the bell. The rings or hoops constitute an effectively solid anvil against which the lead can be caulked. The rings or hoops are also arranged in such a manner as to have a wedge effect.

Hydrocarbon Coke Free From Volatile Matter Marketed in the Form or Irregular Flakes

Patent No. 1,257,959; described in Patent Office *Gazette*, Feb. 26, 1918, page 943. Ray Potter Perry, Montclair, N. J., assignor to the Barrett Company, New York, N. Y., a corporation of West Virginia. Original application filed May 19, 1915. Serial No. 29,219. Divided and this application filed Sept. 1, 1915. Serial No. 48,384. (Cl. 204-65.)

This is a product consisting essentially of irregular scales of coke and containing very little volatile matter.

Advertising Display Board With an Adjustable Flap for Automobile Radiator

Patent No. 1,257,980; described in Patent Office *Gazette*, March 5, 1918, page 12. David E. Ewing, Hartington, Neb. Filed Jan. 25, 1917. Serial No. 144,448. (Cl. 40-61.)

This is an advertising device comprising a board shaped to cover an automobile radiator. It has a vertically swinging flap, which bears the same advertising message as the board. When the flap is open it covers the advertising on the board, and when closed allows the message on the board to appear.

Automatic Absorption Refrigerating Machine Using a Composite Refrigerating Agent

Patent No. 1,258,017; described in Patent Office *Gazette*, March 5, 1918, page 20. Frederick G. Keyes, Boston, Mass., assignor to National Automatic Refrigerator Company, a Corporation of New Jersey. Filed Jan. 27, 1917. Serial No. 144,835. (Cl. 62-178.)

The refrigerating agent used in this method is a composition comprising an absorbent, a solvent and a refrigerant. The process comprises distilling from the composition into a refrigerating chamber, the solvent and the refrigerant in proportions comprising substantially a critical boiling mixture and causing the mixture to vaporize in the refrigerating chamber in the critical proportion and be reabsorbed by the absorbent.

An Odorless Heater Which Supplies Humidity to the Air

Patent No. 1,258,652; described in Patent Office *Gazette*, March 12, 1918, page 244. Adam Clarke, Chicago, Ill. Filed April 30, 1917. Serial No. 165,344. (Cl. 126-90.)

This heater has a drum mounted on a base containing water. The drum has a top and a horizontal partition near the bottom. Tubes extend from the partition up through the top. There is also a vertical partition at one side which communicates with the base. Just above the lower partition in the drum is placed the burner, and the drum just below the burner is pierced with air holes. The air entering from the outside of the drum passes over the burner, and to the top of the drum, where it goes through openings into the passages which carries it down and over the water and then up through the vertical tubes in the center of the drum to the room to be heated.

Combination Gas Range, Broiler and Water Heater Heated From a Single Chamber Burner

Patent No. 1,258,084; described in Patent Office *Gazette*, March 5, 1918, page 39. Arthur L. Bailey, Jamaica Plains, Mass. Filed March 22, 1917. Serial No. 156,753. (Cl. 126-39.)

This gas range has a cooking top, a combination baking and broiling oven and a water circulating coil beneath the cooking top. The oven and cooking top is so designed as to make a wholly enclosed chamber below the top in which the burner is placed. The top of the oven is removable, so that the contents of the oven may be exposed to the direct heat of the burner for broiling purposes. The water-circulating coil is located to one side of the burner chamber in such a manner that air may enter the chamber, and the heat from the burner passes directly to the cooking top. When the top of the oven is in place the heat from the burner circulates through passages around the oven and heats it, thus making it possible to cook in the combination oven and on the cooking top at the same time. There is also a second oven so spaced from the exterior walls and the combination oven and burner chamber as to permit the cir-

culation of heat from the burner chamber. This second oven is connected with the combination oven by means of a passage provided with a damper having two effective positions. When this damper is in one position it prevents the direct supply of heat from the burner chamber to the passage about the second oven. When it is in the second position it permits a direct supply of heat.

Water Valve for Instantaneous Water Heaters Having Water Controlled Movable Piston

Patent No. 1,257,933; described in Patent Office *Gazette*, Feb. 26, 1918, page 936. Edwin Ruud, Pittsburgh, Pa., and Herbert S. Humphrey, Kalamazoo, Mich., assigned to Ruud Manufacturing Company, Pittsburgh, Pa., a corporation of New Jersey. Original application filed June 15, 1915, Serial No. 34,250. Divided and this application filed Sept. 28, 1915. Serial No. 53,070. (Cl. 126-351.)

This valve has a combination casing having a water inlet and an outlet. It is fitted with a movable piston, which is ported for the passage of water and provided with a port surrounding valve seat facing the inlet portion of the casing. The piston is provided with guideways parallel to its direction of motion, and which limit the movement of the piston. The gas valve is operated by this piston through the medium of a stem.

An Indicating Mechanism for Thermostats Equipped with Special Adjustments

Patent No. 1,358,161; described in Patent Office *Gazette*, March 5, 1918, page 62. George E. Spear, Boston, Mass., assignor to Standard Thermometer Company, Portland, Me., a Corporation of Maine. Filed March 27, 1915. Serial No. 17,308. (Cl. 200-31.)

This mechanism has in combination with a circuit-closing piece, a dial, a pointer pivoted thereon, and a contact plate. The contact members are carried by the plate. A regulating screw is provided having two threaded portions. One portion engages the teeth of the pointer, making it possible to move it relative to the dial. The other threaded portion engages the contact plate so that the contact members may be moved toward or from the contact closing piece.

A Rotary Tube Cleaning Tool Having an Adjusting Mechanism

Patent No. 1,258,094; described in Patent Office *Gazette*, March 5, 1918, page 43. Philip J. Darlington, Hartford, Conn., assignor to the Roto Company, Hartford, Conn., a Corporation of Connecticut. Filed Feb. 25, 1915. Serial No. 10,504. (Cl. 83-64.)

This tool has a rotary axial stem carrying an outwardly extending arm near each end. A pin extends through these arms and supports a yoke. A flanged disk is supported on the yoke ends, and means are provided for limiting the swing of the yoke, thus adjusting the cleaner to the size of the tube.

A Method of Controlling the Temperature of Hot Plates for Internal Combustion Engines Through the Medium of a Heat Absorbing Liquid

Patent No. 1,258,155; described in Patent Office *Gazette*, March 5, 1918, page 60. Harold F. Shepherd, Grove City, Pa., assignor to Bessemer Gas Engine Company, Grove City, Pa., a Corporation of Pennsylvania. Filed Nov. 25, 1916. Serial No. 133,370. (Cl. 132-30.)

This device controls the temperature of the hot plate by absorbing the heat of the plate with a liquid having a vaporizing point at or above the ignition point of the explosive mixture ignited by the hot plate. The absorbed heat is dissipated by vaporizing the liquid, condensing the vapor and returning it to the cooling chamber.

Gas or Oil Burning Range with Burners in a Fire Box

Patent No. 1,258,210; described in Patent Office *Gazette*, March 5, 1918, page 76. Arnold F. Glass, Birmingham, Ala. Filed June 21, 1916. Serial No. 106,658. (Cl. 126-39.)

This range is built somewhat along the lines of an ordinary coal range. The burners are placed in a chamber corresponding to the firebox of the coal range. The heated products of combustion circulate around the oven much in the manner they do around the oven of a coal range, but means are provided for directing these products of combustion through the oven. Dampers are provided for controlling the circulation of the heated products of combustion around the oven or for cutting them off from the oven altogether.

Protector for Cutting Edge of Chisels While Being Carried in Tool Kit

Patent No. 1,258,481; described in Patent Office *Gazette*, March 5, 1918, page 154. Arthur B. Shobar, Lamoille, Nev. Filed Aug. 1, 1917. Serial No. 183,916. (Cl. 145-24.)

This is a metal cap shaped to fit over the end of the chisel and with the wall fitting the edge shaped at a greater angle than the beveled edge of the tool, which prevents the edge of the tool itself touching any metal and prevents its being nicked while being carried in a tool bag, box or kit.

Pipe Coupling or Joint Using a Soft Metal Distortable Ring

Patent No. 1,258,166; described in Patent Office *Gazette*, March 5, 1918, page 63. Carl W. Vollman, Montreal, Quebec, Canada. Filed Oct. 1, 1915. Serial No. 53,662. (Cl. 137-28.)

This method consists of a relatively soft distortable ring shaped with a flange to fit over the end of the threads on the end of one pipe and with a face fitting over the end of the pipe. Flanges which screw over the ends of the pipe are provided with recesses to receive the flanges of the soft ring. These flanges hold the two pipes together by means of bolts passing through them.

Range Boiler with a Conical Self Cleaning Sediment Bottom

Patent No. 1,258,184; described in Patent Office *Gazette*, March 5, 1918, page 68. John J. Butler, Norfolk, Va. Filed Aug. 7, 1916. Serial No. 113,522. (Cl. 126-362.)

This boiler has a double conical bottom. The lower bottom holds the sediment below the point of circulation of the water. The cold water pipe extends slightly below the top of the upper conical bottom, and is fitted with a multiple jet nozzle for spraying water against the inside of the upper cone, and thus keeping it free of sediment. The bottom of the lower cone is fitted with a pipe and drawing-off cock.

VOLUNTEER OIL & GAS COMPANY, Terre Haute, Ind., capital $50,000, to operate oil and gas wells. Directors: A. L. Pfau, Julius Lederer, James J. Swango, William E. Eppert and Samuel T. Greenberg.

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Expedients That May Become Institutions

The hand of Government has been placed on the utilization of coal. As an expedient to carry the nation over the period of excessive need the Fuel Administrator is organizing a network of fuel engineers and inspectors to see that industrial plants get the maximum efficiency from each pound of coal that they burn.

No hint has been conveyed that the functions of this establishment will be carried beyond the war period, but once organized, there is every logical reason to believe it will never, should never, be disbanded.

The coal resources of the nation are the backbone of its future. Used they should be, to as great an extent as our needs require, but every ounce needlessly wasted is a crime against future generations. And the great mass of our people to-day are giving a vast amount of thought to their responsibilities to posterity.

The great wonder is that so great a saving as the Fuel Administrator expects to effect should at this period be possible. If we have the mechanical means to get these increased efficiencies from coal to-day, we did not lack them to a very appreciable degree two years ago. The waste, and no one will question that it exists, is chargeable only to mental laziness and sloth. The loss sustained due to the ton of coal that was wasted, thanks to the superabundance we were blessed with, was not severe enough to bestir us to activity in eliminating it.

But what is done with the coal that is under our territory is a matter that concerns more than the owner of the lands or the purchaser of the mined product. It concerns the whole people.

It is right that the restraining hand of Government should be laid upon the utilization of coal, that its voice should demand to know what use is being made of this natural resource in which its future is so indissolubly linked. It is hoped its hand will never be removed.

Hasten the Changing Over

Comments which have come in on our editorial "A Real Means of Getting Rid of the Open-Flame Burner," published in the July 6 issue of the AMERICAN GAS ENGINEERING JOURNAL, are convincing that gas men are giving this matter considerable thought at the present time. It would appear that now is the right time to deal the death blow to an old friend who has become our worst enemy, and an enemy of the nation.

He is a stubborn old fighter is the open-flame burner. With nothing to recommend him, not even his looks, he has succeeded in hanging on. Even yet a large proportion of our lighting business is represented in him. He has been proved wasteful, yet he continues to be cherished. He ruins his users' ceilings and costs them in a relatively short time in renovations, if the

appearance of the house is kept up, more than a complete mantle-lighting equipment would cost. Still the demand for burner tips is large.

He has cost gas companies thousands of dollars, due to delays in getting a heat unit standard adopted. Yet they have made no attempt at the kind of effort that is necessary to be rid of him.

But to-day the gas companies have a natural ally. No one should be more interested in eliminating the open-flame gas burner than the National Fuel Administrator. By compelling the public to devote real thought to ordering and using the raw fuel it burns, an unpardonable sin, he seeks to effect a saving in coal consumption that might in a way be rivalled by the simple elimination of the open-flame burner.

Eliminating it, it might even be possible to let all other illumination restrictions go by the board and still use no more coal for such purpose than we have been using since these restrictions went into effect.

How many rooms could be heated by the gas saved by the total elimination of the open-flame burner? How many industrial tasks could be provided with fuel?

The National Fuel Administrator has given some publicity towards the elimination of the open-flame burner. It has not been ambitious enough, however, to make much of a dent.

There is an opportunity here, however, for some cooperation between the National authority and the gas companies.

The latter should be able to supply thousands of names and addresses of open-flame burner users. With these to work with, the Fuel Administrator, by adopting the practice of the Treasury Department in the Liberty Loan campaigns, could get right into the heart of the evil by reaching such users right in their homes by mailed publicity matter.

The Why of the Oldest Type of Pipe in Use for Gas Mains

Surprise has been expressed by a Western reader that the Eastern gas companies should be apparently so slow in taking up the new type of pipe for gas mains. "Is this due," he wonders, "to the inherent conservatism of the East?"

Our Western reader apparently has not fully familiarized himself with the conditions in the East. It is not an inherent disinclination to adopt new ideas that has held large Eastern companies to cast-iron pipe. It is a knowledge of their own particular situations and of the disadvantages of the newer types of pipe. There are allurements to a pipe that is laid in lengths much greater than is common in cast-iron pipe, that practically eliminates bell holes, that requires no lead for jointing, and that is absolutely tight, when well laid, for a limited number of years after it is laid.

But in the last statement lies the disadvantage. The Eastern companies cannot afford a pipe that has definite limitations as to usefulness. It wants as near to eternity as it can possibly get.

In a city like New York there are locations where the cost of the pipe and the labor directly involved in laying it is the least item. Paving restorations sometimes run near to five dollars a square yard and the paving and the foundation that is torn up to dig the trench represents a costly work in itself.

Surplus excavated material sometimes has to be carted miles for disposal and the excavation itself is slowed up by traffic considerations and subsurface obstructions. Blasting out rock is necessarily a piecemeal job, and backfill is a more expensive undertaking than merely shoveling the material back into the hole. It is bounded by many restrictions and money-consuming requirements. Then, too, there are inspection charges and duplicating inspection charges.

Once a gas company in such a situation has a main out of sight, it would be happy, indeed, if it could have it out of mind for evermore. It cannot afford to invest in a pipe that must be taken up in large part within a definite number of years. In fact, it is quite possible that municipal authorities would object quite strenuously to the gas company's disrupting the traffic situation, say, once a decade in almost completely removing and restoring its transmission system. At least the gas company would make itself a continuous nuisance to the people of its community.

It may be argued that there are streets yet unpaved in cities like New York. This is true, but who is to say that they will remain unpaved for the next ten or fifteen years. Within a reasonably short time after there is need of a gas main in such a street there is a public demand for the paving of that street.

Since the beginning of the manufactured gas business permanence has been the important quality demanded of gas main materials. Until the makers of lighter types of piping can prove the possession of such merit, they cannot hope to compete with cast iron, except in special cases, in the gas field.

He Likewise Serves and Perhaps to a Greater Degree

Some time ago we described in the AMERICAN GAS ENGINEERING JOURNAL a gas installation which superceded coke as the fuel for a large galvanizing bath. This gas installation made the process of galvanizing more economical, and cheapened the product without impairing its quality. There was especially a saving in labor.

The man who devised the system by which gas could be so effectively applied was, of course, an engineer. While well known in strictly engineering circles, it is questionable if the mention of his name before a lay-

men group at that time—he has since done work that has brought him into general prominence—would have evoked the least sign of recognition. Yet a decade from now we may look back upon men such as this as saviors of their country on the same plane as our victorious generals and our great statesmen.

It is trite to say that the forces of democracy are going to win the war. The only question is the question of cost.

To-day the United States alone has close to, or perhaps in excess of three million men under arms. Not middle-aged men or greybreads, but young men almost invariably with all the fire and physical endurance and vim that are characteristic of such men. They are almost without exception men without dependents regarding whose welfare they might be inclined to worry while they are abroad engaged on a task that is in itself sufficient to engage all their faculties. Only one obstacle, an economic one, is in the way of the country's putting in perhaps eight million more similarly qualified as to youth and physical qualifications for effective fighting. These men are just as good in quality as those who have gone. The reason they have not been sent is dependents, and in some cases the fact that it is not at present considered justifiable to compel men to go to war who have not yet attained the voting age. But if the need required they could be taken—such men have been taken in the enemy powers; then it would be for the country to take upon itself the providing for the dependent. This would cost a tremendous sum, but not a sum beyond the nation's resources.

Then there is the British Empire, France, Italy, and numerous others, smaller, but in the aggregate of considerable potentialities. The resources of the allied powers are overwhelming. Even with inferior leadership, which is not by any means the case, victory is inevitable Great Britain may have to utilize women aviators in fighting, France may have to put thousands of willing greybeards into the line, the United States may have to call upon its millions of young men with dependents, and the financing of the war may become to us a real burden, but it would require inconceivably inferior leadership to fail to win with the resources the allied powers have yet to be drawn upon.

But with the war's end the problems and the pitfalls of the United States do not end. They merely begin.

Hundreds of thousands of new workers will have been enlisted in the ranks of industry. They will have become accustomed to high rates of compensation. A better mode of living will have become a necessity to them. When the war ends they will have to continue in industry or go back to a restricted mode of living, which spells social unrest.

They will have brought the country's productiveness up to a point much beyond the country's consumption. Millions released from military service must have work in the industries provided for them. This will further increase the country's excess production. A market outside the country must be found for this excess. Otherwise, there will not be sufficient work to keep the labor army engaged. There will result privations, discontent and social unrest.

All foreign countries will not represent a market for our products. France will need much, and England and Russia, but will have to cut their cloth to fit their purses and credit. The enemy powers will need more, but their purchasing power will be even more limited if it exists at all.

All the nations now at war will have to sell goods in the countries that have money to get sufficient within their own borders to keep them going.

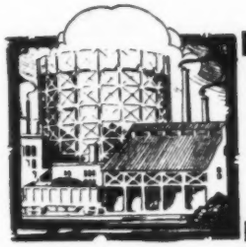
If the United States is to have an export market it must get it by being able to sell equal or better quality at a lower or equal price.

Our cost per laborer must be high, or we will have much lower paid workers, and again industrial unrest. We must make the labor cost per unit of production low by augmenting that laborer's productiveness by brain work and mechanical means.

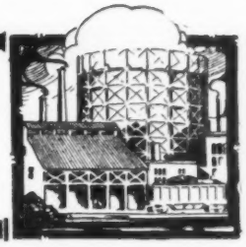
The engineer who devised the gas-fired installation for those galvanizing baths has made one contribution in this direction at least. There must be hundreds and thousands of such contributions. The gas man, or other industrial worker, who neglects to improve his knowledge and ability to effect lower costs in producing manufactured goods in this country by every available means is a more injurious type of slacker to his nation even than the courageous youth who makes it a point to get across the Mexican border previous to the advent of his twenty-first birthday.

Not a Paying Policy to Condemn the Expenditure of Every Sixpence on Monday That Fails to Yield an Obvious Shilling on Tuesday

One is liable, when urging an embarkation on a research conducted without any *immediate* practical object in sight, to be reminded that the practical man is out to make money, and not to subsidize pure scientific research, which does not obviously or directly contribute to this result. This attitude is largely due to a misapprehension of the methods of science. In the larger affairs of life and business, it is not a paying or long-sighted practical policy to condemn the expenditure of every sixpence on Monday which fails to yield an obvious shilling on Tuesday. Still less is it a far-sighted view that nothing is likely to matter much to a concern, even one in which large risks are taken, because it has hitherto been able to pay a big dividend. What does matter is the establishment of a sound policy while business is good, and the furthering of future interests while things are still going well—*J. B. Farmer.*



NEWS OF THE GAS INDUSTRY



Western States Company Authorized to Issue $690,000 of Notes

The Western States Gas & Electric Company has been authorized by the railroad commission to issue $690,000 of five-year 6½ per cent collateral trust notes, payable Aug. 1, 1923. The company must issue and pledge as security to secure payment of the notes $931,500 of its first and refunding 5 per cent gold bonds, payable June 1, 1941.

The commission has also authorized the company to execute a collateral trust agreement defining the terms and conditions under which the concern may issue from time to time under the authority of the commission $1,500,000 of 6 per cent collateral trust notes.

Gas Plant Workers Wanted by Government

State draft headquarters recently announced places open for voluntary induction of men who are gas plant workers. They are to be sent to Washington for training.

New Bedford Rate Hearing Set for July 23

The application of the New Bedford (Mass.) Gas & Edison Light Company for permission to raise the price of gas from the present rate of $1 per 1,000 ft. to $1.15 will be given a hearing by the State gas and light commission in the municipal building on July 23, at 10.45 a. m.

13,500 Tons of Coal Reach Bridgeport Within 48 Hours

In the forty-eight-hour period ending at noon, July 1, 13,500 tons of hard coal were received in the Bridgeport, Conn., harbor. With no large shipments to that city reported since June 26, the total for the week-end period of time comprises nine days' average receipts, based on the Government figures of 1,500 tons a day.

In all thirty-nine barges were brought to the stake-boat in the harbor. Half of the boats were laden with soft coal. Two bargeloads went directly to the dock of the Bridgeport Gas Light Company, whose supply had become greatly diminished.

Old Artificial Gas Plant at Greenville Being Dismantled

The old artificial gas plant which has stood at the foot of West Main Street, Greenville, Ohio, for many years is now being torn down and conjecture is rife as to the future use of the ground formerly occupied by the old plant.

The building, which has stood for years, has been ordered torn down by State authorities on account of its unsafe condition.

Deep pits and wells under the place made it very dangerous.

Worcester Gas Hearing Goes Over to July 26

President Francis H. Dewey informed the State gas and electric light commission that the mass of figures prepared by Alton D. Adams, representing the city in the Worcester (Mass.) Gas Light Company hearing, and the charges that certain construction work had been charged up as repairs would require investigation, and he asked that he be allowed time to have the examination made before he proceeded further with his cross-examination of Mr. Adams. The commission granted his request, and set Friday, July 26, at 10 o'clock, as the time for resuming the hearing in City Hall.

Third Gas Well in Findlay Good

The third gas well Findlay, Ohio, has drilled for the use of its water works plant will flow more than 30,000 cu. ft. of gas daily, and will save the city about $25 per day in coal.

California Railroad Commission Renders Prompt Decision in Application of Southern Counties Gas Company for Reasonable Rates

Commissioner Loveland Endorses Views of Fuel Administration As to Financial Stability of Public Utilities

With a promptness which is praiseworthy in the present emergency, and which might well be emulated by rate-fixing bodies in other States, the Railroad Commission of California rendered, on July 3, its decision in the Southern Counties case. The final hearing was held in Los Angeles on May 6, so less than two months elapsed from the time the case was submitted until a decision was rendered. In view of the fact that an extensive production, transmission and distribution system reaching some forty-two communities was involved, the California commission can well be proud of the promptness with which a decision was reached.

Before settling the question of rates the commission reaches the following conclusions in the more important questions raised at the various hearings:

1. That the introduction of natural gas by reason of its greater heat content has materially reduced the volumetric consumption, and consequently the company's revenue, as compared with the revenue obtained from manufactured gas, has been reduced. This loss has, however, been counteracted to some extent by the development of industrial gas sales.

2. That the oil gas plants formerly operated and now made practically obsolete by the introduction of natural gas should be disposed of on the present favorable market for second-hand materials. The rates fixed provide earnings sufficient to amortize, in a period of ten years, the re-

maining value of the plants so disposed of.

3. That the change from artificial gas to natural gas has increased the amount of gas lost (leakage), and that to reduce these losses large expenditures must be made for maintenance. The rates fixed provide an allowance sufficient to meet the expense of reducing the losses to normal.

4. Three separate systems of rates are fixed—one for each of the three large districts supplied by the company. The basis for the segregation into districts is the source of gas supply, each of the three being supplied from a different source. On this basis of segregation the same rates apply throughout each district, no distinction being made between the larger cities and the rural communities in the same district.

5. In the very important question of a proper minimum charge the commission uses the following language: "The minimum charge of the present domestic rates varies from 50 cents to $1 per month. Much testimony and several exhibits were submitted regarding the minimum charge. After analyzing the number of minimum consumers upon applicant's system, and the actual consumer expense, I have decided that too much of the burden is borne by certain other consumers under the existing rates, and that in order that each consumer should bear his just burden a uniform minimum charge of $1 per meter per month should be made."

The new rates fixed are as follows:

(a) Rates for entire eastern district, including Orange County, Whittier, Pomona and Monrovia divisions:

SCHEDULE 1-A, CLASS A—NATURAL GAS

	Per 1,000 Cu. Ft.
First 1,000 cu. ft. or less per mo..	$1.00
Next 4,000 cu. ft. per month.....	0.80
Next 15,000 cu. ft. per month....	0.60
Next 30,000 cu. ft. per month....	0.50
Next 50,000 cu. ft. per month....	0.40
Over 100,000 cu. ft. per month...	0.35

This schedule applies to all domestic consumers using gas for any purpose; also to restaurants, apartment houses, hotels, hospitals, sanitariums, business buildings of all kinds, schools, churches and all other consumers who use gas for cooking meals or for heating buildings.

Consumers of this class will have priority in the use of gas over consumers of Class B, C and D at times when there is insufficient gas to supply the demands of all classes.

A consumer of this class may not demand gas at any time at an unreasonably high rate per hour.

SCHEDULE 1-B, CLASS B—NATURAL GAS

	Per 1,000 Cu. Ft.
First 200,000 cu. ft. per month...	$0.40
Next 300,000 cu. ft. per month...	0.35
Next 500,000 cu. ft. per month...	0.30
All over 1,000,000 cu. ft. per mo..	0.25

Minimum bill—$5 per month per meter from May to October, inclusive; $1 per month per meter from November to April, inclusive.

This schedule applies only to gas used in internal combustion engines.

Consumers of this class will have priority in the use of gas over consumers of Class C and D at times when there is insufficient gas to supply the demands of all classes.

SCHEDULE 1-C, CLASS C—NATURAL GAS

	Per 1,000 Cu. Ft.
First 50,000 cu. ft. per month....	$0.45
Next 150,000 cu. ft. per month...	0.35
Next 400,000 cu. ft. per month...	0.30
All over 600,000 cu. ft. per month	0.25

Minimum bill—$15 per month per meter from May to October, inclusive; $1 per month per meter from November to April, inclusive.

This schedule applies to gas used by commercial and industrial consumers, whose demand for gas is not dependent upon atmospheric temperature, or upon the preparation of meals, and whose time of maximum demand, if any, does not coincide with the maximum demand hours of Class A consumers. It will not be required that consumers of this class be equipped with facilities for using other fuel. This class will include bakeries, packing houses, metal working plants, preserving and canning establishments, fruit and vegetable dryers and other consumers whose load has the characteristics named above.

Consumers of this class will have priority in the use of gas over consumers of Class D at times when there is insufficient gas to supply the demands of all classes.

SCHEDULE 1-D, CLASS D—NATURAL GAS

	Per 1,000 Cu. Ft.
First 100,000 cu ft. per month...	$0.35
Next 200,000 cu. ft. per month...	0.30
All over 300,000 cu. ft. per month	0.25

Minimum bill—$50 per month per meter from May to October, inclusive; $5 per month per meter from November to April, inclusive.

This schedule applies to gas used by those industrial consumers located on existing high-pressure mains having a capacity in excess of the present demands of Class A, B and C consumers, for the use of steam boilers, incinerators, kilns or similar appliances which are not used to heat buildings or to prepare meals, and which are equipped to use other fuels and can be changed over to use other fuels on thirty-minutes' notice. At times of gas shortage consumers of this class will be shut off in favor of Classes A, B and C. No obligation is undertaken to serve consumers of this class of any period of time.

SCHEDULE 1-DA—SPECIAL OIL FIELD SERVICE

For Montebello Fields—
Straight rate.....$0.20 per 1,000 cu. ft.

Minimum monthly charge—$50 per meter installation; minimum guaranteed use of gas at each meter installation $500.

This schedule applies only to consumers who desire to use gas for pumping or drilling oil wells by steam power. It is for the sale of surplus natural gas, and consumers who are supplied under the same, will be subject to shut-off without notice in the event of a threatened or actual shortage of gas, and the company will not be liable for any damages occasioned by shutting off the gas supply. Such consumers will be expected to keep a supply of other fuels on hand.

(b) For southern district, including Long Beach, Seal Beach, Wilmington, San Pedro and adjacent territory.

Note.—The following schedules are classified as A, B, C and D consumers on the same basis as the above.

SCHEDULE 2-A, CLASS A—NATURAL GAS

	Per 1,000 Cu. Ft.
First 2,000 cu. ft. per month.....	$0.90
Next 8,000 cu. ft. per month.....	0.75

Next 10,000 cu. ft. per month....	0.65
Next 30,000 cu. ft. per month....	0.55
Next 50,000 cu. ft. per month....	0.50
All over 100,000 cu. ft. per month	0.40

Minimum bill—$1 per month per meter.

SCHEDULE 2-B, CLASS B—NATURAL GAS

	Per 1,000 Cu. Ft.
First 50,000 cu. ft. per month....	$0.55
Next 150,000 cu. ft. per month...	0.45
All over 200,000 cu. ft. per month	0.40

Minimum bill—$5 per month per meter from May to October, inclusive; $1 per month per meter from November to April, inclusive.

SCHEDULE 2-C, CLASS C—NATURAL GAS

	Per 1,000 Cu. Ft.
First 50,000 cu. ft. per month....	$0.50
Next 150,000 cu. ft. per month...	0.45
Next 300,000 cu. ft. per month...	0.40
All over 500,000 cu. ft. per month	0.35

Minimum bill—$15 per month per meter from May to October, inclusive; $1 per month per meter from November to April, inclusive.

This schedule is based upon service at a pressure of 4 oz. above atmospheric, however, providing any consumer requires gas at a greater pressure, and the company is able to furnish same reasonably, the above rate will be increased 1 per cent for each 2 lb., which the average pressure required and delivered exceeds 3 lb. per square inch.

SCHEDULE 2-D, CLASS D—NATURAL GAS

	Per 1,000 Cu. Ft.
First 500,000 cu. ft. per month...	$0.40
Next 500,000 cu. ft. per month...	0.35
All over 1,000,000 cu. ft. per mo..	0.30

Minimum bill—$50 per month per meter from May to October, inclusive; $5 per month per meter from November to April, inclusive.

(c) Western district, including Santa Monica, Venice, Ocean Park, Culver City, Palms, Sawtelle and adjacent territory:

SCHEDULE 3-A, CLASS A—MIXED GAS

	Per 1,000 Cu. Ft.
First 2,000 cu. ft. per month.....	$1.15
Next 8,000 cu. ft. per month.....	0.95
Next 15,000 cu. ft. per month....	0.80
Next 25,000 cu. ft. per month....	0.70
All over 50,000 cu. ft. per month.	0.60

Minimum bill—$1 per month per meter.

SCHEDULE 3-B, CLASS B—MIXED GAS

	Per 1,000 Cu. Ft.
First 50,000 cu. ft. per month....	$0.60
Next 150,000 cu. ft. per month...	0.55
All over 200,000 cu. ft. per month	0.50

Minimum bill—$5 per month per meter from May to October, inclusive; $1 per month per meter from November to April, inclusive.

SCHEDULE 3-C, CLASS C—MIXED GAS

	Per 1,000 Cu. Ft.
First 50,000 cu. ft. per month....	$0.60
Next 150,000 cu. ft. per month...	0.55
All over 200,000 cu. ft. per month	0.50

Minimum bill—$15 per month per meter from May to October, inclusive; $1 per month per meter from November to April, inclusive.

SCHEDULE 3-D, CLASS D—MIXED GAS

	Per 1,000 Cu. Ft.
First 100,000 cu. ft. per month...	$0.55
Next 200,000 cu. ft. per month...	0.50
All over 300,000 cu. ft. per month	0.45

Minimum bill—$50 per month per meter from May to October, inclusive; $5 per month per meter from November to April, inclusive.

The above schedules mean reduced rates for about 13,000 consumers and increased rates for about 30,000. The final result, however, will be a material increase in the net revenue of the company. In a general way the rates of industrial consumers have been increased somewhat in proportion to the greatly increased cost of other fuels, although 1,100 B.t.u. natural gas at 30 cents per 1,000 cu. ft. is still cheaper than fuel oil at the prevailing price of $1.75 a barrel. The principal increase to domestic consumers is where the minimum charge is raised from 50 cents to $1 a month, and in addition to this the initial block of 2,000 ft. is increased about 15 per cent in the Long Beach and Santa Monica territory.

The broad-gauge manner in which the California Railroad Commission is handling public utility cases at this time is clearly shown by the language of Commissioner Harvey D. Loveland in this decision: "I heartily endorse the views which have been emphatically expressed by the Federal Administration as to the urgent necessity of carefully safeguarding the financial stability of our public utilities. Furthermore, in this particular instance, I believe it to be of the utmost importance that rates be so fixed as to encourage the use of natural gas wherever its use will result in the conservation of other fuels, particularly oil, all of which are of such vital importance in the present crisis."

Receiver Asked for Amesbury Company

Notice that a receivership has been asked for the Amesbury & Salisbury Gas Company, of Amesbury, Mass., has been received by the gas commission. The petitioner is the John Cashman Corporation, of Haverhill. The petitioner asserts that the advanced costs of coal, material and labor cause the business to be unprofitable.

Rate Increase Announced by Webster & Southbridge Company

Increased cost in the manufacture and materials used in the manufacture of gas, has led to the announcement by the Webster (Mass.) & Southbridge Gas & Electric Company of an increase in the rates for gas, beginning Aug. 1. The new rate will be $1.50 per 1,000 ft., from which a discount of 10 cents per 1,000 for prompt payment is offered, making the net price $1.40. This is an advance of 15 cents per 1,000 over the present rate. It is the first time in history that a similar announcement has been made by the corporation, all other notices sent out to consumers being of a reduction. The company states that a reduction will be promptly made on the return to normal conditions.

12,000,000 ft. Gasser and Oil Well Estimated Good for 200 Bbl. Near Okmulgee Drilled July 6

The first well to attract attention in Okmulgee, Okla., was the Big Ben Oil Company and the Gladys Bell & Oil Company's No. 2 on the S. S. Walker farm in the northeast corner of the south half of northeast of 1-13-11. Sand found at 2,130 ft. was drilled into a few feet when it started off, making better than 12,000,000 ft. of gas. They will shut this gas off and drill for the deeper sands.

Alexander Wigton and other Ok-

mulgee men are the owners of the second new well for July 6, this one being No. 1 and located in the southwest corner of the P. Sunny farm, which is in the northeast 21-13-12. At approximately 2,100 ft. sand was found, and at only a few in the oil began to flow freely and with volume enough that an estimate of 200 bbl. as it stands is considered about the right figure. It will not be drilled deeper at present, but the casing will be reset and tankage built preparatory to getting it deeper into the pay. This well is some distance removed from any other production, and is a genuine surprise.

Program of Power Plant Saving Prepared by U. S. Fuel Administration—Engineers Appointed

State administrative engineers of the United States Fuel Administration held a conference in Washington on June 28 and 29, discussing the plan of organization in connection with conservation of fuel in power plants throughout the United States. The engineers appointed to date are:

Thomas R. Brown, Pittsburgh, for western half of Pennsylvania, formerly special engineer of Westinghouse Air Brake Company.

George R. Henderson, Philadelphia, for eastern half of Pennsylvania, formerly consulting engineer of Baldwin Locomotive Works.

Edward N. Trump, New York City, for State of New York, vice-president of Solvay Process Company.

W. R. C. Corson, Hartford, for New England, secretary Hartford Steam Boiler Insurance Company.

Charles A. Cahill, Milwaukee, for Wisconsin.

Others at the conference were: M. S. Hopkins, Columbus, Ohio; O. P. Hood, Bureau of Mines, Pittsburgh; Prof. L. P. Breckenridge, Yale University; H. H. Stock, University of Illinois.

The national program will extend into all States east of the Mississippi, and include Louisiana, Missouri and Minnesota. An administrative engineer will be appointed for each of the States in the area mentioned.

This plan is the result of conferences with the Federal Administrators and their committees for the group of States which together consume about 70 per cent of all coal used in the United States, exclusive of railroads. The plan has received the endorsement of all of these States, as well as approval by the United States Bureau of Mines and the Committee of Consulting Engineers on Conservation and Publicity, which represents the Engineering Council of the four National engineering societies.

The slogan of the campaign is "Maximum production with minimum waste." The object is to operate all industries at full capacity, but to make every pound of fuel perform maximum service.

In laying the foundations for the organization it has been anticipated that this work should become a permanent service of the Government.

Ten to 20 per cent, that is, from twenty-five to fifty million tons of coal per year, can be saved by correct operation of steam power plants, using their present equipment and without installation of new apparatus.

It is considered most important that all existing fuel conservation committees, committees of chambers of commerce and national defense, manufacturers' associations and other bodies be continued in full force, and that the co-operation of such organizations be obtained.

The administrative engineer in each State will work under the supervision of the present Federal Administrator. No separate or new organization is contemplated, but sufficient addition to the working force in each State will be made to insure efficient execution of the new function.

The national plan comprises certain fundamentals, as follows:

1. Personal inspection of every power plant in the country.

2. Classification and rating of every power plant, based upon the thoroughness with which owner of said plant conforms to recommendations.

3. Responsibility of rating the plants will fall upon the administrative engineer in each State, the rating to be based upon reports of inspectors, who will not express opinions, but will collect definite information. The State Fuel Administrator in his judgment may entirely or partially shut off the supply of coal to any needlessly wasteful plant in his territory.

4. Inspectors are to be furnished from one or more of the following sources: (a) Inspectors of the steam boiler insurance companies; (b) State factory inspectors; (c) engineering students from technical colleges, and (d) volunteers and others.

The ratings will be based upon recorded answers to questions, each of which will be given a value depending upon its relative importance to the other questions. Depending upon the efficiency of methods in use in any plant, it may be rated in Class 1, 2, 3 or 4.

The administrative engineer in each State will have supervision of electrical and mechanical problems connected with fuel conservation activities contemplated under this plan.

The ratings will be based upon existing equipment. The difficulty, delay and expense involved in the installation at this time of improved power equipment is fully recognized, but experience has proved that 10 to 20 per cent of fuel now used in power plants can be saved by improvements in operation alone.

In advance of the first inspection a questionnaire is being sent to every power plant in each district, with notice to the owner that within, say, sixty days his plant will be inspected personally, and the questionnaire will be checked up by the inspector upon his visit. This action will give a reasonable time to any plant owner to improve the operation of his plant and conform to recommendations before his plant is actually rated. Thus, when the inspector calls for the purpose of obtaining and checking up the information form, the plant may receive a much higher rating than would have been the case if no time were allowed between the sending and collecting of the questionnaire.

It is recommended that a board of competent engineers be attached to the conservation committee in each State; also a corps of lecturers to arouse public interest and disseminate engineering information.

The Fuel Administration has prepared a fifty-minute film of moving pictures showing good and bad operation in the steam boiler plant, methods of testing boilers, etc. These pictures will be available to each State in connection with its educational propaganda.

The Administration is also preparing a series of official bulletins on engineering phases of steam and fuel economics. Some of these are now ready for printing. They will include:

1. Boiler and Furnace Testing.
2. Flue Gas Analysis.
3. Saving Steam in Heating Systems.
4. Boiler Room Accounting Systems.
5. Saving Steam and Fuel in Industrial Plants.
6. Burning Fine Sizes of Anthracite.
7. Boiler Water Treatment.
8. Oil Burning.
9. Stoker Operation.

In addition to this service, a list has been prepared in Washington of competent engineers for each State, and is available for use of each local administration. As the work develops, still further constructive assistance is contemplated for helping owners to bring their plants up to a high plane of economic operation.

Laclede Company Petitions Commission for Increase

The Laclede Gas Light Company, of St. Louis, Mo., July 10 filed a petition with the Missouri Public Service Commission asking authorization of a schedule increasing the gas rates from 75, 55 and 45 cents to 90, 70 and 60 cents per 1,000 cu. ft., effective Aug. 10. The petition cites the following increased costs over the previous year: Coal, $100,000; other fuel, $70,000; oil, $240,000; labor, $300,000; taxes, $100,000; interest, $60,000. The petition estimates the new schedule will increase the annual revenue $850,000, and declares operating expenses last year were $1,000,000 more than the previous year. Although the Laclede company has a contract with the city authorizing a maximum charge of $1.25 per 1,000 ft. until 1920, the company voluntarily reduced the rates whenever possible, and in recent years has been charging about half the maximum allowance. The St. Louis County Gas Company has also asked increased rates.

Gas Coal Still Limited at Rochester

A shortage of gas coal is still troubling officials of the Rochester (N. Y.) Railway & Light Company. Although large allotments of gas coal have been promised to the company, relatively little has been received, and as a result the new gas plant is being operated below capacity. The lack of coal is not acute at present, because of the small amount of gas used, but an effort is being made to increase the gas coal supply so that the heavier demands in the next months may be met.

Public Service Commission, First District Located in, New Offices

The Public Service Commission of the State of New York, First District, recently announced that on and after July 15, 1918, the offices of the commission would be located at No. 49 Lafayette Street, New York City. Telephone Franklin 5800.

Louisville Bonds Sold Within a Week

The $10,500,000 issue of Louisville Gas & Electric Company first and refunding, mortgage, five-year 7 per cent gold bonds, purchased by a syndicate consisting of the Harris Trust & Savings Bank, of Chicago, Guaranty Trust Company, of New York, and E. H. Rollins & Sons, was sold within one week of the offering date.

Portland Company Authorized to File Emergency Schedule

The public utilities commission recently rendered a decision authorizing the Portland (Ore.) Gas Light Company to publish and file on or before July 30, 1918, effective Aug. 1, 1918, and continuing one year an emergency schedule of gas rates which shall not exceed $1.50 per 1,000 cu. ft.

Iowa City to Employ Engineer to Place Valuation on Plant

At a recent meeting the Iowa City council decided to secure the services of an expert and make an invoice and place a valuation on the plant of the Iowa City Light & Power Company. Upon the value of the plant depends to a great extent the price of gas to the consumer, as sufficient earnings will have to be allowed the company to pay dividends on the real value of the company's plant.

Up to this time the light committee has no one in mind who would be competent and who could be secured, except that the name of Dean W. G. Raymond, of the University Engineering College, who has had several similar jobs in the last few months, has been mentioned.

Bellefontaine's New Municipal Plant Now in Operation

The new Municipal Coal Gas Plant, located on the Jesse M. Dowell property and the Big Four Railroad, Bellefontaine, Ohio, was put in operation July 5.

The board of public service of Bellefontaine has realized for some time past that the Water Gas Plant was inadequate with regard to its capacity, and in the latter part of 1916 took up for serious consideration the construction of a new gas plant to take care of the requirements of the city.

Clair A. Inskeep, director of public service and acting in accordance with Mayor Kennedy, took up the investigation of the proposed plant, having in mind that another water gas plant constructed along modern lines would best meet the requirements.

After thorough investigation, it was decided that owing to the high cost of coke and the rapidly increasing price of oil, used in making water gas that it would be impossible to manufacture water gas excepting at prohibitible cost to the user, so that other types of plants were then considered, and a coal gas plant was decided by them as the logical solution of the problem.

City officials, realizing the responsibility placed upon them in reaching this decision, considered it proper to secure the services of engineers of experience and standing before proceeding with the work along lines as had been dictated, and in this connection secured the services of Professor McCracken, engineer of the Ohio State University, of Columbus, Ohio, and G. Herman Gamper.

These engineers, after a careful survey of the situation, entirely agreed with the opinion of the city officials, and then proceeded to draw up plans and specifications for the installation, after which bids were advertised and contracts placed with D. W. McGrath Company, of Columbus, Ohio, for the grading, foundations and buildings, and with the Gas Machinery Company, of Cleveland, Ohio, for the gas benches, gas works apparatus, purifiers and ammonia plant.

Considerable of the material used was secured in Bellefontaine, the McGrath company making contracts with the Bellefontaine Bridge Company for the structural steel used in the building construction, and the

Gas Machinery Company likewise having considerable dealings with the bridge company as well as other business concerns in Bellefontaine.

The contract for the new plant was made May 24, 1917, at which time it was anticipated that the plant would be completed, ready for making gas, within one year.

The unprecedented cold weather of the past winter delayed the building construction, which necessarily had to be completed before the apparatus could be installed, but even with the handicap caused by this delay, the plant is now producing gas, being completed only about five or six weeks later than first contemplated. The formal starting of the plant was attended by Mayor Kennedy, Director of Public Service Inskeep, Service Director Hiatt and other public officials, representing Bellefontaine, beside a large number of public-spirited citizens.

Professor McCracken and Mr. Gamper, the engineers from Columbus, were also present to see the thing start off in proper shape, and the Gas Machinery Company was represented by Henry Schremser, its construction and operating engineer, who is at present in active charge of the plant, and also C. H. Printz, from the Cleveland office.

The plant as completed represents the last word in the art for gas plants of the size proper for supplying needs, due consideration being given in all details to extension of the plant to take care of the rapidly increasing demand.

The retorts in which the coal is coked are made of silica materials to withstand the high temperature, and are placed in settings of six retorts each, each setting being heated by a coke fire generator or furnace of a recuperative type so that the spent gases passing from the benches are utilized to superheat the primary and secondary air used in connection with the producer fire for maintaining temperatures in the benches ranging from 2,000 to 2,500 deg. Fahr.

The speed at which these benches are operated is dependent upon the temperature maintained and the weight of the coal charged, and varies from four-hour periods to eight-hour periods.

The coal is charged into these retorts from the charging buggies by means of scoops, and the men handling these coal scoops distribute coal equally throughout the length of the retorts.

After the coal has been in the retorts the proper time to insure thorough distillation, the coke which is left after the gas and other vapors have been driven from the coal is pushed from the retorts by hand-operated pushing machines and discharged into receiving hoppers supported from the floor in the rear of the benches, where it is quenched by means of water sprayed onto the outside surfaces of the coke, which water, of course, immediately vaporizes, forming steam, which acts as the principal quenching and cooling agent for the hot coke.

After the coke is discharged, the rear mouthpiece door of the retort is closed and a fresh charge of coal shoveled into the retort, after which the front door is then sealed and the gas-making process continued.

The new plant contains four benches, each bench consisting of six retorts, and the charge of coal is varied from 400 to 600 lb., according to the demands of the plant, the condition of the heats of the benches and other operating features which must be carefully considered.

From every ton of coal charged into the retorts it is estimated that there will be produced 10,000 cu. ft. of gas, 10 gal. of tar, 4½ lb. of ammonia and about 1,300 lb. of coke, about 300 lb. of which is required to heat the benches for each ton of coal carbonized.

The gas, tar and ammonia all pass in vapor form through the ascension or standpipes into the hydraulic mains which are provided with a water seal to prevent the return of the gas to the retorts when the lids are opened for discharging the coke and refilling with coal.

It is essential that the gas be taken from the hydraulic mains as rapidly as it is produced in order that no back pressure may be caused in the retorts which would result in a loss of gas made, as the same would leak through the walls of the retorts into the combustion chambers, where the furnace gas is burned for heating the retorts, and consumed there.

In order to draw the gas from the hydraulic mains, an exhauster of the positive blower type is provided which machine is driven by a steam engine.

As the amount of gas made fluctuates from time to time, owing to the freshness of new charges or retorts being opened for discharging and filling, it is necessary that this exhauster shall be driven at proper speed to maintain a practical constant inlet pressure at the exhauster regardless of the volume of gas made.

This regulation is secured by means of a gas float actuated by a steam regulating valve at the exhauster engine, so that the machine automatically increases or reduces its speed according to the demands reflected from the gas float, which is in turn connected to the main gas inlet pipe leading to the exhauster.

The gas, when it passes the exhauster, is heated, and in order to recover the tarry and other liquids carried in vapor form, the gas is cooled after passing the exhauster in condensers.

This condenser is a large steel tank 6 ft. in diameter and 19 ft. high, and is fitted with a large number of 3-in. tubes.

The gas passes inside of the shell but around the tubes, and water passes through the tubes, flowing in the opposite direction to the passage of the gas, so that the gas is rapidly reduced in temperature to about 60 deg. Fahr., to permit the proper recovery of tar and ammonia.

The next apparatus in series is a tar and ammonia washer, which is a cast-iron vessel provided with baffle plate at the inlet of the gas, which baffle plate connects to a number of horizontal inverted U-shaped ducts which are provided with serrated edges.

The lower edge of these ducts is immersed in water, and the gas is obliged to bubble through the water in minutely divided streams caused by the serrated edges, which arrangement insures thorough washing of gases.

The tar is partly condensed from the gas in the condenser above described, and the remaining injurious tar is removed in the tar and ammonia washer by active contact with the washing liquid.

After the tar and ammonia washer is located, the ammonia scrubber, which is a large steel shell placed in vertical position, and the inside of which is filled with wooden grids.

The gas enters the scrubber at the bottom of these grids and passes upward to the outlet gas connection near the top of the shell, and during the passage of gas through this shell it is subjected to intimate contact with the wetter grids, the water being fed into the top of the scrubber by an automatic flushing arrangement to insure thorough saturation of the gas.

The function of this scrubber is to remove the ammonia from the gas and water, which has a strong affinity for ammonia, is used as the scrubbing agent.

From the scrubber the gas passes to two large purifiers, which are located on the site of the old gas plant.

These purifiers are each 15 ft. in diameter and 12 ft. in height, and built for a divided gas flow to insure maximum efficiency.

Each purifier is fitted with two layers of trays suitably supported, and on these trays is placed the oxide through which the gas passes to remove the sulphurated hydrogen and other injurious impurities.

This oxide, which is frequently referred to as iron sponge, is made of fine cast-iron borings thoroughly oxidized and planer chips to make the material porous and permit passage of gas without excessive back pressure.

After the gas passes the purifiers it goes through a station meter to permit measuring the total amount of gas produced.

From the station meter, the gas passes into the main gas storage holder, which is the only part of the old plant that is used in connection with the making of coal gas.

The demands on the gas plant have grown to such an extent that the pipe lines are inadequate to supply the service during hours of excess demand, when depending entirely upon the holder pressure, and in order to improve the quality of service the new plant is provided with a high-pressure booster, which will, when operated, increase the pressure on the street mains, and thereby sufficiently increase the amount of gas which they pass to insure an adequate supply at all hours.

This booster will only be operated during hours of peak demands.

All of the apparatus is connected together by means of ten cast-iron pipes, and each piece of machinery is also provided with by-pass valve connections so as to permit shutting down any individual piece without interfering seriously with the operation of the plant for the time necessary to make replacements or repairs.

The water which is used in the washer and scrubber for treating the gas passes into a large concrete sealed tank or basin, and ammonia contained in same is then treated in an ammonia concentrator or still so as to prepare this product for the market.

The concentrated liquor as it comes from the still is stored in a large steel tank of 12,000 gal. capacity until a sufficient amount has been made to permit shipment to the refiners in tank cars.

The tar which is recovered at various points throughout the plant passes into a large receiving well, where it is stored until shipment is made.

For the operation of the exhauster engine, tar and liquor pumps and ammonia concentrator, a considerable amount of steam is required. To provide for same, the plant is equipped with duplicate boilers so as to insure an adequate supply at all times, not only for the operation of the plant, but for the heating of the building and the water in the gas storage holder tanks during the cold weather.

The coke used in the generators for heating the retorts is handled directly from the retorts by means of a hot coke chute, which operates on overhead tracks feeding directly into the furnaces, thus assuring highest efficiency from the coke used for this purpose.

The coke which is not required in the operation of the plant will be sold to the public of Bellefontaine.

The coke which is made for sale, after being quenched in the quenching chutes, is discharged into industrial cars, which are propelled by means of cable haul to a high coke trestle.

These cars are equipped with automatic dumping doors, so that the operator at the furnace floor will be able to discharge cars at any point desired within the limits of the trestle, and it is probable that within a short time a screening plant will be provided for cleansing and sorting the various sized coke.

The plans prepared for this plant contemplate at a future time the installation of a coal-handling apparatus for minimizing the labor in unloading the cars of coal as they may be received and placing the coal in storage, and provision is also made in the existing retort house by the installation of an extra arch for six additional retorts, and this generating capacity may be still further extended by the addition of other benches as they may be required from time to time until the present capacity of the plant is more than doubled.

The retort house is of steel framing, the sides and roof being covered with corrugated asbestos cement.

The design of this building represents the most advanced ideas of retort-house buildings, insuring well-lighted and well-ventilated working quarters for the men, offering unusual facilities for extension, and being absolutely fireproof and practically indestructible.

All floors within the building are neatly and substantially paved with cement.

Fort Smith Company Redeems Bonds

The Fort Smith Light & Traction Company, Fort Smith, Ark., has deposited with the Illinois Trust & Savings Bank $40,500 for the annual sinking fund, which is to be applied to the purchase of first mortgage 5 per cent bonds due 1936.

Oklahoma City Employees Pledge $2,200 in War Savings Stamp Drive

One hundred and seventeen employees of the Oklahoma Gas & Electric Company, Oklahoma City division, pledged themselves to purchase a total of $2,200 of War Savings Stamps during the remainder of the year.

New Rate in Effect at Stillwater

Northern States Power Company, Stillwater (Minn.) division, has placed in effect an increase in domestic gas rates. The new rate is to be $1.50 per 1,000 cu. ft.

Increase Announced for Fargo

Increase in gas rate has been announced at Fargo, N. D., by the Union Light, Heat & Power Company. The top rate for gas will be $2 per 1,000 cu. ft., effective July 1.

Greenwood Locates Second Test

The Greenwood Oil & Gas Company, which has just recently completed a 2,500,000 gas well in 27-15-17, has made a location for another test, which will be directly west of the new one in the southeast corner of northeast of southeast of 24-15-17, No. 1 on the Iva Taylor farm. The gasser was found in the first

venture the company attempted in eastern Oklahoma, and the find promises much in the way of encouragement for a drilling campaign in that vicinity which, until this time, has not been drilled. The company has about 700 acres around the well.

Test Gas Pressure to Determine Future Needs

In order to learn whether the gas pressure in Vallejo, Cal., is sufficient for the new Government housing project, tests were made on the mains by Assistant Engineer Henderson, of the Pacific Gas & Electric Company's main office at San Francisco, who came up for that purpose. The results of the tests are not known and will not be for possibly ten or fifteen days, as the findings have been sent to Government officials, who will pass upon them.

Little Rock Company Will Raise Rates Beginning July 1

The Little Rock (Ark.) Gas & Fuel Company, through William F. Booth, manager of the company, recently notified Mayor Taylor that the rates of natural gas to consumers would be increased, beginning July 1, as follows: For the first 50,000 cu. ft., 45 cents per 1,000; for the next 50,000 cu. ft., 35 cents; for the next 50,000 cu. ft., 30 cents; for the next 50,000 cu. ft., 25 cents; for all over 200,000 cu. ft., 20 cents.

The rates now in force are: For the first 10,000 cu. ft., 40 cents; for the second 10,000 cu. ft., 35 cents; for 130,000 cu. ft., 30 cents; for 200,00 cu. ft. or more, 20 cents.

Eau Claire Gas Rate Raised 30 Cents

The railroad commission has authorized the Wisconsin-Minnesota Light & Power Company, which was recently granted a surcharge of 10 cents per 1,000 cu. ft. of gas in Eau Claire, to add a surcharge of 30 cents per 1,000 cu. ft.

In its decision the commission said in part:

"It is argued that the company should stand a part of the burden of war conditions and insofar as this may be practicable we find no fault with the argument. It will be borne in mind, however, that one of the elements entering into the cost of public utility service is the cost of capital, and unless capital can receive the wage to which it is fairly entitled it will not be invested in extensions of the public utility's business, and in extreme cases the company's credit may be practically destroyed.

"If the amount which is required to meet interest charges is not more than a conservative return upon the actual value of the property, we have yet to find any justification for refusing to grant an increase of rates which is necessary to avert disaster."

Sturgis Company Seeks Rate Increase

In behalf of the Sturgis (Mich.) Gas Company, Vice-president L. F. Ryall appeared before the city council recently with a request that an advanced rate be granted the Utilities Operating Company.

An increase of 25 cents per 1,000 cu. ft., making the net rate $1.50 for emergency period.

The reason given for requesting the increase is increased cost of coal, of labor and general operating expenses, which have soared tremendously in the past year.

Charge for Piping Requested by Manitowoc Company

The Manitowoc (Wis.) Gas Company has petitioned the railroad commission for several new rules, among them one permitting the company to make a charge for piping from the curb to the meter, which the company must now do at its own expense. The company now makes a charge where the piping inside the curb is in excess of 40 ft. The cost of furnishing free service has doubled in recent years. The city has received notice of a hearing in the matter.

Committee Appointed to Audit Records of Michigan Light Company

The special committee appointed by the council to select auditors to examine the accounts and records of the Michigan Light Company, Bay City, Mich., relative to its claim submitted recently asking for an increase of rates, reported that Comptroller Reid, City Recorder Grant and Charles F. Braman had been selected to do the work.

Tri-City Gas Company Increases Rates

The Tri-City Gas Company, Gadsden, Ala., announced that it has increased the price of gas from $1.25 to $1.75 per 1,000 ft., the advance being effective on July 1.

In a published statement the company recites the fact that it began business in 1910 and charged $1.75 with a 10 per cent discount for cash. Later the price was reduced to $1.50, and still later a 25 per cent discount was allowed, making the net rate $1.25 per 1,000 ft.

The company claims that it is forced to raise the price back to $1.75 because of the increased cost of operation.

Spring Valley Asks Rate Increase

The Spring Valley Utilities Company recently filed an application with the State public utilities commission for permission to increase gas rates in Spring Valley, Ill., to $2 per 1,000 cu. ft.

Notices of Rate Increases Filed by Three Pennsylvania Companies

Notices of rate increases were filed with the public service commission recently by the Kane Gas Lighting & Heat Company, Kane City Gas Company and Jersey Shore Gas Company.

Atlantic City Company Defaults in Payment of Interest —Foreclosure Proceedings Contemplated

Large Philadelphia holders of sinking fund bonds of the Atlantic City Gas Company, upon which the company defaulted in interest on July 1, are said to contemplate foreclosure proceedings to secure control of the company and reduce the $3,000,000 mortgage upon the plant. A company official said the company defaulted in the payment of interest because it was not making enough money under the dollar rate, which has prevailed there for years, to pay it.

The New Jersey Public Utility Commission recently authorized the company to advance its rate to $1.15,

pending an investigation of taxpayers' claims that the $5,000,000 valuation of the plant is excessive by $3,000,000.

Natural Gas Limited to House-Hold Users

Making it illegal to use natural gas for manufacturing purposes, an order passed by the Ontario Railway and Municipal Board went into effect July 15. After that date only domestic consumers will be supplied. Schools, hotels, office buildings and all factories using gas to generate steam will have to use other fuel. Manufacturers of Kent County have protested against the order.

Palmer Consumers to Pay Increased Rate

The Worcester County Gas Light Company, of Palmer, Mass., has announced an increase in rates effective July 1. Gas for general use will in future cost $2.50 net per 1,000 cu. ft. for the first 2,000, and for all over that amount $2.40 net per 1,000. In making the increase the company states that since its system was built in 1905 the income has never equaled the expense and the stockholders have never received one cent in dividends.

Sufferings That May Be Entailed on Public if Staten Island Company Cannot Get Funds

The situation of those public utility corporations which are unable to obtain permission from the public service commissioners to advance rates for their products or to issue new obligations, continues to agitate banking and investment circles. Some idea of what it will mean to the public at large if the utilities companies are unable to issue new securities or to advance rates is conveyed by the case of the New York & Richmond Gas Company. If that corporation is unable to obtain funds necessary for the expansion of its facilities, and is not permitted to advance its rates to meet the increase in the cost of labor, fuel, etc., it is estimated that in its community 3,000 homes, averaging four or five members to a family, will be obliged to eat raw food, in the absence of any other means of cooking than by gas, and 13,500 residents deprived of cooked food at each meal. To that can be added 10,000 meals a day, served by lunch wagons and quick lunch rooms entirely dependent upon gas for cooking purposes.

Five hospitals—Fort Wadsworth, Fox Hill, the Staten Island, St. Vincent and U. S. Marine—will be deprived of gas service used for sterilizing instruments, hot applications, diet cooking and laboratory work.

Some of Staten Island's leading industries may have to shut down. One thousand would be a conservative estimate of the number of persons that would be thrown out of employment by a failure of gas service. This can be more readily understood, officers of the company say, when it is known that many industrial plants and users of gas engines for power purposes would shut down abruptly. The refrigerating plant of the Swift Beef Company, at Stapleton, is entirely dependent upon gas for the operation of its refrigerating plant, and would suffer irreparable harm.

Coal yards could not be expected to meet the sudden and unexpected demands for fuel that would be occasioned by a failure of gas service. Restaurants and lunch wagons, in the absence of other available fuel, could not meet the demands made upon them for cooked food that would be occasioned by a failure of gas service.

Figured from another angle, the substitution of intermittent for continuous gas service would occasion a change of cooking equipment in 3,000 homes on Staten Island. A conservative estimate of the cost of installing a modern coal range under the present condition of the labor and material market would be $80. This in itself would represent an outlay of $240,000 for additional kitchen equipment in homes alone, exclusive of the requirements of lunch wagons, restaurants and manufacturers.

Form New Corporation for Slatington Gas Company

John L. Cutshall, Edwin R. Snyder and Frank M. Cressman, recent purchasers of the Slatington gas works at Slatington, Pa., met in the office of Butz & Rupp, when a new corporation for the plant was formed. A board of directors was selected at the meeting.

It was decided to employ the name of the Slatington Gas Company, and the capital stock was placed at $35,000, this latter subject to the approval of the public service committee.

The plant was sold to its present owners on April 6 of this year on foreclosure proceedings of the Lehigh Valley Trust Company, of Allentown, which held a mortgage. On June 19 the deed of conveyance was delivered to the purchasers.

Officers of the company elected are: Frank M. Cressman, president, and Edwin R. Snyder, secretary; Frank M. Cressman, Edwin R. Snyder, William Gangawere, Reuben J. Butz and John L. Cutshall, directors.

Fire Damages York Plant—Will Be Rebuilt

Superintendent Harvey, of the Public Service Company of York, Neb., returned from Omaha July 4, suddenly called home by the news that the gas plant had been burned early that morning. Upon his arrival in the city, Mr. Harvey stated that the plant would be immediately rebuilt and equipped for service. With this end in view he brought with him from Omaha Mr. Rice, of Cleveland, Ohio, an expert constructing engineer, who, upon his arrival in York, started plans for the very early rehabilitation of the plant, and Mr. Harvey had a supply of gas for consumers by the afternoon of July 7. Mr. Harvey also stated that the two generators in the establishment were not damaged in the least, but that testing and measuring apparatus, piping, etc., are a total loss. The holder and gas tanks also escaped, and the superintendent states that had these burned there would have been no gas for six months.

What Superintendent Harvey considers one of the luckiest things of the entire business lies in the fact that there were in the plant when burned 16,000 gal. of oil which miraculously escaped destruction. If this oil had become ignited that entire part of town would have been endangered.

Computing loss and insurance the superintendent stated that there was a loss of $1,000 on the building, and there was the same amount on the machinery. The loss on building was total. There was $500 insurance on machinery, but the loss is estimated at a thousand or more.

Missouri Commission Suspends for 120 Days Increased Rates of St. Louis County Company

As a result of the protest of a committee representing a number of municipalities served by the St. Louis County Gas Company, the Public Service Commission of Missouri has suspended for 120 days the schedule of increased rates which the company sought to have become effective July 21.

The St. Louis County Gas Company operates outside of the city of St. Louis, and serves the suburban cities of Clayton, Kirkwood, Webster Groves, Maplewood, University City and a number of other communities. The company asked a 45-cent increase per 1,000 cu. ft. for all classes of service, and that 10 per cent of the gross amount of each bill be added as an additional charge representing an emergency rate increase.

The commission will hold a public hearing on the subject, but has not yet announced the date.

Hearing on Boise Rate Case Set for July 24

The public utilities commission recently ordered the hearing of the petition of the Boise (Idaho) Gas, Light & Coke Company for authority and permission to increase its rates, set for July 24.

Grand Rapids May Have Toluol Plant

Government officials have been in Grand Rapids, Mich., recently making a survey of the Grand Rapids Gas Works with a view to the construction of a plant for the conversion of toluol. It is estimated that the plant would cost about $135,000 and it would be entirely a Government proposition, to be abandoned at the close of the war.

Baltimore Company Opened Summer School July 10 for Instructing Women

The young women's training school of the Consolidated Gas, Electric Light & Power Company, of Baltimore, at 1068 North Front Street, begun July 10 its summer session with ten to fifteen pupils. The third floor of the Front Street building has been thoroughly renovated and fitted for the purpose and all necessary appliances have been installed.

L. W. Herbst, of the company, is the chosen instructor, a man especially well qualified for the work. Mr. Herbst says the purpose in mind is the developing of young women for answering complaints. These women will be instructed how to install gas ranges and everything relating to heating and lighting appliances and the reading of meters.

These trained young women will, when a complaint is lodged, make a personal visit to the home and there correct the trouble and properly instruct the housewife in the care and handling of the range, heaters, lighting and all appliances and fixtures.

Petition Filed for Increase at Paxton

The Paxton Gas Company filed a petition with the State public utilities commission asking for an order authorizing it to increase its rates for gas in Paxton, Ill., 33 per cent throughout.

American Meter Company Receives Large Order from Public Service Commission

The American Meter Company, Inc., has just received an order from the Public Service Commission of New York for the First District for a large quantity of apparatus, including calorimeters, for the purpose of equipping twenty testing stations in New York City.

Increase Sought for Helena, Mont.

Cooking and illuminating gas will be raised from $2 to $2.50 per 1,000 cu. ft. if a petition now on file with the State railroad and public utility commission is granted. It was filed by the Helena (Mont.) Light & Railway Company.

Combination Furnace Put on Market by Pittsburg Company

The Schaffer Heating Company, of 108 Wood Street, Pittsburgh, Pa., announces the invention and production of a combination furnace, one that will consume either or both gas or hard coal, and warns the public not to wait until winter, but to prepare for the cold weather by installing a heating plant that can alternate gas and coal without changing or disconnecting grate bars, connecting pipe or gas burner. An added advantage is that one can burn gas in spring and fall and coal in winter.

Rate Increase Denied Four New Jersey Companies

An application to increase rates has been denied to four gas light companies of New Jersey. A joint petition was submitted to the public utilities commissioners, showing increased cost of production of between $75,000 and $100,000 a year. It was filed as an emergency measure. The commissioners ruled they had no province in deciding on fair returns in the case.

The companies which appealed were the Cranford Gas Light Company, Elizabethtown Gas Light Company, Metuchen Gas Light Company and the Rahway Gas Light Company.

Prominent Kalamazoo Man Dead

John J. Knight, aged seventy, one of Kalamazoo's most valuable and progressive citizens, died Wednesday night, July 10, of heart trouble. For three years he had suffered from this malady, repeated attacks forcing him to relinquish many business activities.

Ill-health made it impossible for him to shoulder the active responsibilities of these various positions. He has continued to hold his chair as a member of the respective directorates. He was directly interested in the organization and foundation of the Kalamazoo Vegetable Parchment Company, the Kalamazoo Loose Leaf Binder Company, the Arcade Company, the General Gas Light Company, Michigan Enameling Company, Kalamazoo Hotel Company and Merchants Publishing Company.

Mr. Knight was for years general manager of the Kalamazoo Gas Company, now known as the Michigan Light Company.

He was born in New York State, near Rochester, and attended school in that city, but went to Michigan as a young man.

Cohoes Corporation Wants to Take Over Two Other Properties and Increase Capital

There was no opposition before the public service commission on the hearing of the joint petition of the Cohoes Power & Light Corporation to take over the properties of the Cohoes company and the Cohoes Gas Light Company, and for approval of an issue of $2,500,000 first mortgage bonds and $2,500,000 in capital stock. The commission reserved its decision.

Engineer Places Valuation on Property of Peoples Company

A. S. D. Little, gas engineer for the Illinois Public Service Commission, has placed a valuation of $45,639,939 on properties of the Peoples Gas Light & Coke Company, after allowing for depreciation. This compares with valuations ranging from $90,412,000 to $105,000,000 by five engineering concerns and the balance sheet valuation of $99,307,279.

Personal Notes

JOHN E. GARVEN has been elected a trustee of the Consolidated Gas Company of New York, succeeding the late John W. Sterling. Mr. Garven was also elected to the finance committee of the company.

ANTHONY O'MALLEY, of Summit Street, Clinton, Mass., an employee of the Clinton Gas Light Company at the gas plant on Pleasant Street, was severely burned July 8 about the hands and face while shoveling coal into the large gas producer. His condition is now reported as improving.

J. WEAVER SMITH has resigned his position as industrial fuel salesman of the Elkhart (Ind.) Gas & Fuel Company to go to Indianapolis, Ind., where he has assumed similar duties with the Citizens Gas Company.

W. E. QUILLIN, new business manager at Lorain, Ohio, of the Lorain County Electric Company, has been appointed manager of the Salina (Kan.) Light, Power & Gas Company. M. L. Derge, present head at Salina, has resigned to go with the Trumbull Manufacturing Company at Warren, Ohio. Mr. Quillin has been with the Doherty organization since 1907, when he joined the new business staff of the Lincoln (Neb.) Gas & Electric Light Company. He was a graduate in electrical engineering at Purdue University, and secured his first position with the General Electric Company at Schenectady, N. Y. Later he was with the Terre Haute, Indianapolis & Eastern Railway, and then came to the Doherty ranks at Lincoln. Since that time he has been at Montgomery, Ala., Easton, Pa., 60 Wall Street, New York, and Alliance, Ohio.

EDWIN H. HALL, formerly of Brooklyn, N. Y., died at his home in Duluth, Minn., July 8. Mr. Hall was at one time connected with the Brooklyn Gas Company.

WILLARD P. PARSONS, a leading resident of Cohoes, N. Y., died July 7, at his home, 30 Saratoga Avenue. His health began to fail about four months ago, and he relinquished his office duties shortly after. Mr. Parsons was about sixty years old. He was secretary and general manager of the Cohoes Gas Light Company. He was born in Hoosick Falls and went to Cohoes in 1910. Prior to that time he was mechanical engineer in Pittsburgh, Denver and other large cities. He was known throughout the States as a power expert and mechanical engineer.

MANUEL DURHAM, seventy-four years old, for many years paymaster of the Consolidated Gas Company of New York, died on July 8, at his home in Montclair, N. J.

MICHAEL J. MURRAY, thirty-two years old, of 145 Fourth Avenue, South Brooklyn, N. Y., died July 9, after a long illness. He was in the employ of the Brooklyn Union Gas Company.

WILLIAM J. TANNEY, aged fifty-two, of 1247 North Negley Avenue, Pittsburgh, Pa., died unexpectedly in his home July 4. Mr. Tanney was head of the W. J. Tanney Detective Agency. His first employment was with the Philadelphia Gas Company, in charge of a reducing station at Cork's Run.

Construction Notes

Begin Work on Large Gas Plant at Canton

A large gas producing plant, costing approximately $200,000, is to be erected at Canton, Ohio, by the United Alloy Steel Corporation, according to a recent announcement.

The new gas plant, which will be of the most modern construction, will be erected at plant No. A to replace the old gas plant, which has been in operation for about fourteen years.

The gas-producing machinery will consist of seven Morgan gas machines. The coal, upon being dumped from the freight cars, will pass through the crushing machinery and thence into the Morgan gas machines, the ashes emerging at the bottom into freight cars.

The machinery will be housed in a building 150 ft. long and 30 ft. wide. The excavating has already been completed and the foundations of the structure laid.

The building will be completed and all machinery installed ready for operation by Nov. 1, according to the plans of the company. The old gas plant has been scrapped. The company now secures gas from the United Furnace Company.

The new office building of the United Alloy Company will be ready for occupancy within six or eight weeks. The construction of the office building was started last fall.

The entire office force will be transferred upon the completion of the new structure and the old building will be abandoned.

Fond Du Lac Plant Making Progress

Construction on the Eastern Wisconsin Electric Company's new gas plant at Fond du Lac, Wis., is going along finely. All the material is now on the ground, with the exception of one car of brick, and this will cause no delay. Prospects are that the hope to have the plant completed early in August will be realized.

Improvements to Insure Adequate Supply Proposed by Southern Counties Company

To assure an adequate supply to the shipbuilding and other growing industries, the Southern Counties Gas Company is contemplating the construction of an 8-in. transmission line from the Long Beach plant at a cost of $90,000.

Work was begun preparatory to laying the 8-in. steel gas pipe line across the east basin channel and through Terminal Island and East San Pedro to Fish Harbor to supply the Southwestern Shipbuilding Company with gas. A temporary pipe line had been placed in commission across the main channel at Tenth Street, and is in use during the construction of the new pipe line.

Retort Benches Being Installed for Several Companies by Gas Machinery Company

Inclined D-shape silica retorts are demonstrating their worth during the present high cost of labor and materials by generating gas with a high make of gas per man and with a minimum of cost.

The Gas Machinery Company, of Cleveland is building six benches of inclined D retorts for the Jacksonville Gas Company, Jacksonville, Fla., four benches for the Mobile Gas Company, Mobile, Ala., and two benches for the Gulf Cities Gas Company, Biloxi, Miss. The work also includes auxiliary apparatus and equipment.

Rebuilding Waco Artificial Plant

F. L. Booth, of the Texas Power & Light Company, Waco, Tex., believes in preparedness. He is rebuilding the artificial gas plant with a view of furnishing the kitchen ranges of Waco with artificial gas in case the natural gas supply becomes inadequate. It is thought that the natural gas supply will be sufficient for household use now that the regulations limiting the large consumers have been passed.

Coal Gas Plant to Be Built Near Moatsville, W. Va.

Plans are under way for the building of an enormous coal, coke, gas and chemical plant, near the village of Moatsville, W. Va., by the Hope Natural Gas Company. Over a thousand acres of land has been optioned in fee on a four months' option for cash at an average of $80 to $85 per acre.

It is to be an enormous coal reduction plant operated on the great coal tract owned by the Hope Natural Gas Company. The operations, however, will not be conducted by the Hope company, but will be carried out by an independent corporation. The operating company proposes to build a $4,000,000 plant 2 miles east of Moatsville on the J. O. Freeman farm, at the mouth of Raccoon Creek, for the purpose of mining and reducing coal. There will be no coal shipped in the usual mercantile form, but all the coal go into retorts for reduction to produce coke, gas, tar, ammonia and the innumerable by-products of coal, and then other departments of the great plant will carry on the further manufacturing of these raw coal products into the myriads of chemicals of which raw coal is the base. This plant will be the first of its kind in the Tygart Valley coal field.

A branch railroad will be constructed from the main line of the Baltimore & Ohio to Bellington and Elkins at Moatsville, up Teter's Creek to the site of the manufacturing plant at the mouth of Raccoon Creek, 2 miles distant.

Gas Works Pipe Line to Be Extended

Relief is to be given residents in the vicinity of the gas plant at Seventeenth and Main Streets, Keokuk, Iowa, from fumes and smoke, caused by the manufacture of the product. J. P. Ingle, manager of the Keokuk Electric Company, after a visit to the plant with Mayor Ed S. Lofton, announced that an extension of approximately 15 ft. is to be placed on the water gas set pipe.

This pipe serves as an exhaust. Complaint was recently lodged with the council by householders in the gas plant region of the odor and noise caused by the manufacture of the gas.

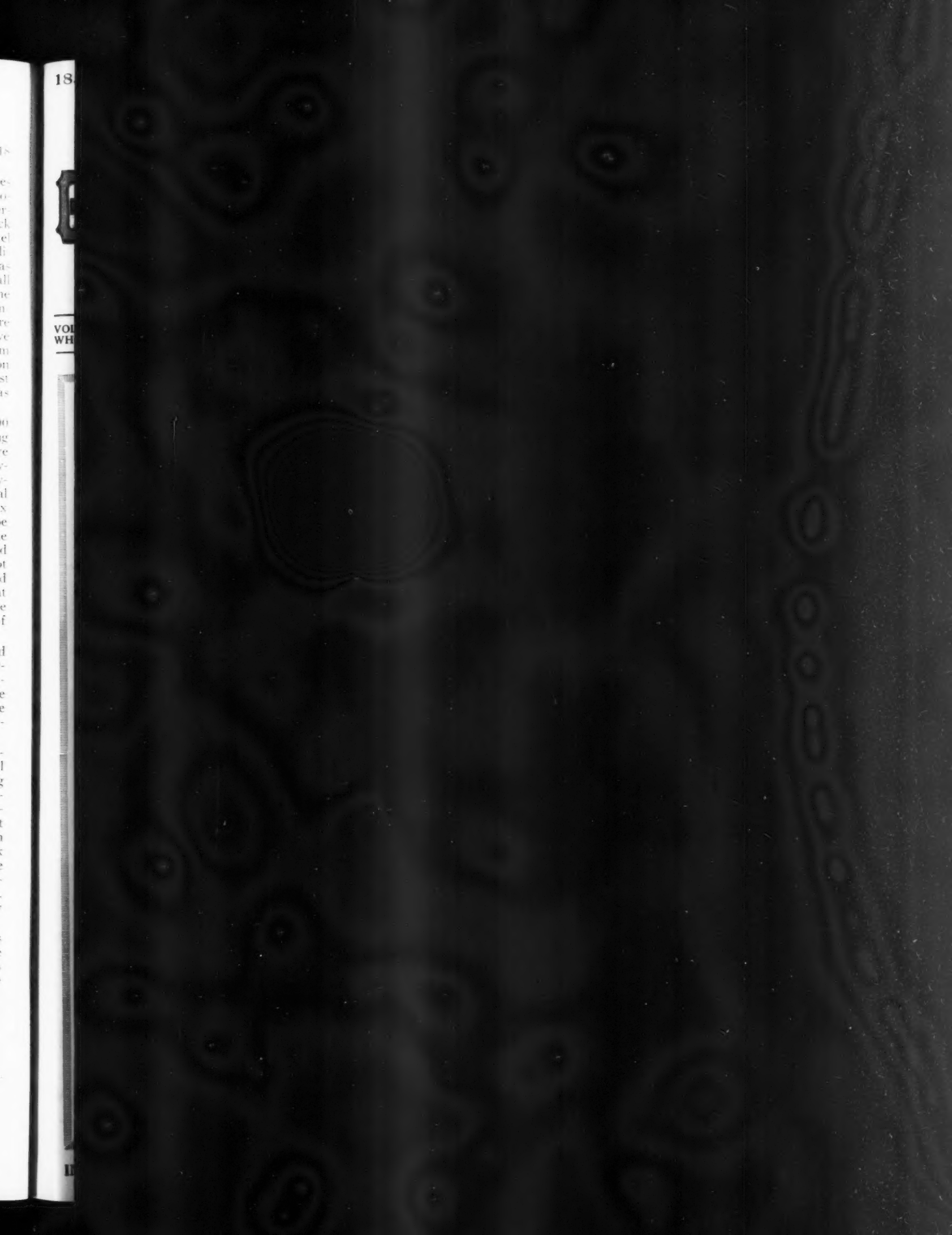
Work to Start on $15,000,000 Plant Immediately

The $15,000,000 U. S. Government nitrate plant for the Cincinnati district will be erected at Broadwell, Ohio, on the Little Miami River, opposite Terrace Park. It is 8 miles in an air line or 11 miles by railroad from the geographical center of Cincinnati. Eugene Y. Sayer, Cincinnati manager of the Air Nitrate Corporation, made the announcement July 4.

Twelve reasons for the selection of the Broadwell tract were given by Mr. Sayer, as follows: It is the largest flat area above high water; has a railroad through the center, and the double-tracked Pennsylvania line reaching toward the east is within a few miles. The Norfolk & Western Railroad runs through the tract; there are two interurban trolley roads within a short distance; work trains can be operated in and out of the city on the railroads; Terrace Park, Milford and Madisonville and other existing communities will be able to absorb a large proportion of the construction and operating employees; there is a brick plant, a rock crusher and a gravel pit on the tract; foundation conditions are excellent; the ground has a natural drainage; there is a small electric power line running up the valley which can be tapped for immediate electric energy; there are good roads to the city; it will save several miles on the power line from the generating plant of the Union Gas & Electric Company as against the Elizabethtown site, which was first under consideration.

The place selected comprises 1,200 acres of level and gently sloping farm land, with about twenty-five owners. Within a short time surveyors will start their work for the laying out of the plant. A board of real estate experts will be appointed to fix values. "No fancy prices will be paid," says Manager Sayer, "but the Government will give what the land is worth. Those who do not accept the Government price will be paid 75 per cent of the amount fixed at once, and the question of paying the remainder will go to the Court of Claims in Washington."

In commenting on the site selected Mr. Sayer said: "The original survey was for 800 acres, but the Government has decided since that time to take 1,200 acres so as to be able to expand the plant to double capacity if necessary."

As soon as the plant is in operation the company will build a model factory village, capable of housing 1,000 families. It is expected to employ about 2,000 men in the operation of the plant itself, but about 8,000 to 10,000 will be engaged in its construction. The building work will take about eight months. The manufacturing process is highly technical, but almost entirely mechanical. Nitrogen is extracted from the air by tremendous pressure.

Another phase of the operation is the conversion of coke and limestone into carbide under a great heat. This product is mixed chemically with the nitrogen and becomes the finished product, ammonia nitrate, which is non-explosive. At no time in the course of the construction is any explosive material handled. The product of the nitrate plant becomes explosive only when mixed with other material in ammunition factories. There will be, however, no such factory on the Broadwell site.